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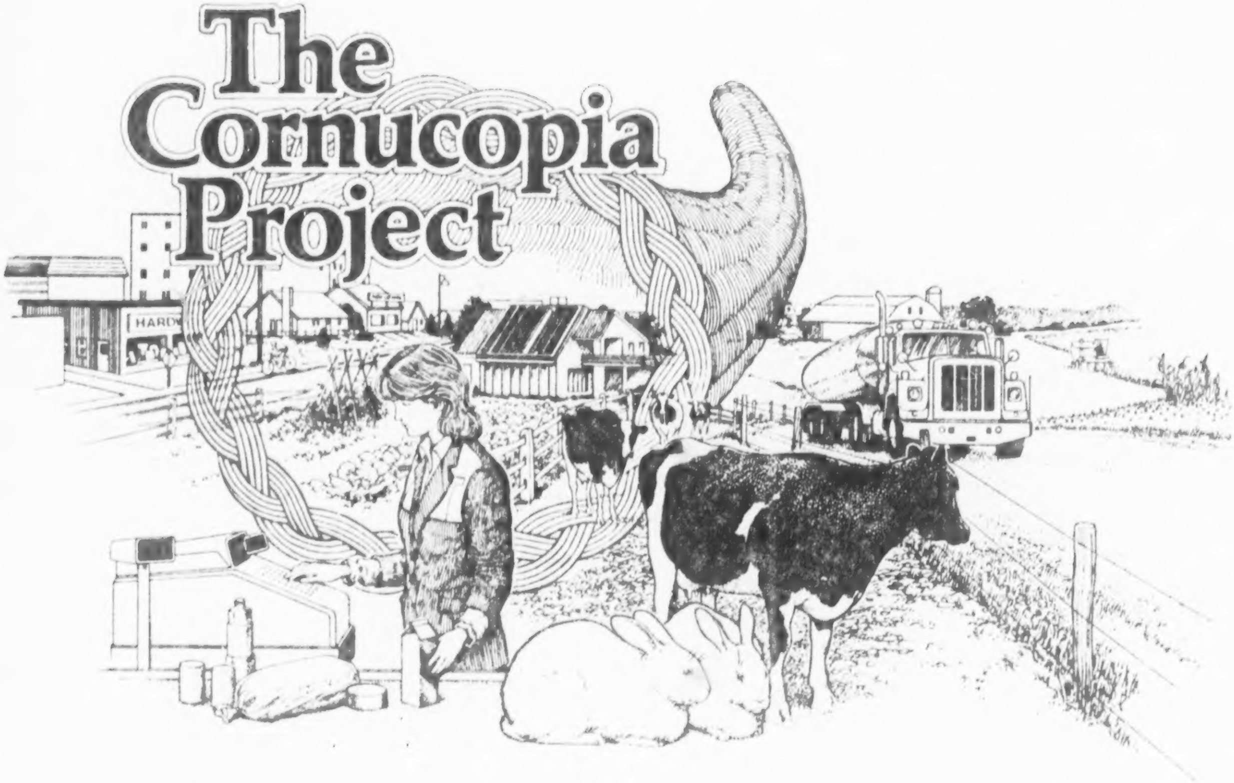
The Cornucopia Project



THE PENNSYLVANIA FOOD SYSTEM: PLANNING FOR REGENERATION

A study of the food system of Pennsylvania by

The Cornucopia Project of Rodale Press

and the research assistance of Ellen Ann Kriss

33 East Minor Street
Emmaus, Pennsylvania 18049
Phone: (215) 967-5171

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INTRODUCTION

Pennsylvania remains the most productive agricultural state in the Northeast. Its bounty testifies to the high capabilities of its 4.4 million acres of prime farmland and to the commitment and resourcefulness of its 61,000 farmers.[1] It leads the U.S. in the production of mushrooms, cigar-leaf tobacco, sausage, scrapple, quality-graded eggs, pretzels, and potato chips and ranks among the top five states in the production of milk, ice cream and frozen dairy products, cottage cheese, apples, peaches, sweet corn, tart cherries, grapes, grape juice and wines, and maple syrup.[2]

Pennsylvania agriculture generates over $2.7 billion in farm receipts, and supports a $20 billion a year agribusiness economy employing more than 900,000 people. That represents one-fifth of the state's work force.[3]

While acknowledging that Pennsylvania is indeed a productive wonder, The Cornucopia Project last year decided to explore the sustainability of its home state's food system. This led to our first report, The Pennsylvania Food System: Crash or Self-Reliance?, which became the "keystone" of future state studies (in New York, New Jersey, Maine, California, Florida, Arizona, etc.) and which lent valuable insight to our investigation of the national food system, published as Empty Breadbasket? The Coming Challenge to America's Food Supply and What We Can Do About It.

What we first detected in Pennsylvania began to emerge in each state food system we turned to. Productivity itself was not synonymous with sustainability, nor could it guarantee secure and affordable food for all. In some cases, heightened productivity had the reverse effect. As farming on marginal land increased and time-honored conservation practices were abandoned, overproductivity was undermining the very resource upon which our food system is based -- the soil.

But the loss of 50.7 million tons of topsoil to erosion was not the only "frightening fact" we touched upon. We were able to put our finger on the "Achilles' heel," the weak spot of our state food system. We discovered that in spite of our high productivity, we import over 70 percent of the vegetables, fruits, and meat we consume, most of which could be produced here to meet our instate food needs.[4] This dependence on long distance food supplies means vulnerability on many fronts and is a far cry from the sustainable, secure, and affordable food system we want all our citizens to have.

We were so concerned by what we uncovered that one year later we decided to probe further. This updated report explores the extent to which we have become more or less self-reliant. But the study would be incomplete if it stopped there. We realize that the food system is an interconnecting web of many strands. Whereas last year we unwound only a few, this year's report is much longer because it traces and examines more of the components of our state's food system. In this study we look at the complex of problems our farmers are facing, including increased debt load and skyrocketing costs of farm inputs. We explore the implications of farm loss to rural economies, and we look at the health of our food industry. We also analyze some of our state laws to see whether or not they are working to help our farmers and to preserve our farmland.

Can we see signs of regeneration? The study acknowledges a number of positive efforts, especially through recent state programs and laws aimed at alleviating specific problems within the farm community. On the whole, however, the view one year later remains bleak. Consider the following:

* We continue to import 71 percent of our food: 281,000 truckloads of foodstuffs enter the state each year to keep us from going hungry.

* Food transportation costs Pennsylvania consumers over $887,000 each day.

* Food export value was $4 billion less than food imports.

* Each year 37 million pounds of fresh vegetables and fruits are damaged or spoiled in transit to Pennsylvania.

* We are still losing 50.7 million tons of topsoil to erosion -- enough to cover the Pennsylvania Turnpike from one end of the state to the other with 3 feet of topsoil.

* Development of our prime farmland continues to exact a heavy toll on our productivity. An area the size of Pittsburgh is lost every 8 months.

* Last year Pennsylvania lost 1,000 farms; in the last 10 years, 12,000 farms have disappeared.

* Last year Pennsylvania farm real estate debt rose over 15 percent -- to $1.4 billion. (National average increase was 11 percent.)

* It cost Pennsylvania farmers 17.8 percent more to produce one acre of corn for grain between 1979 and 1980, while their gross farm income rose only 2 percent.

* The need for heavy fertilizer application by farmers is highly questionable given a 1981 survey of soil testing labs which showed widely conflicting results on the same Pennsylvania soil.

* In the last 25 years Pennsylvania has lost almost 50 percent of its food processors.

* Accessible, affordable food for Pennsylvania citizens is becoming less available. Many grocery stores have closed and several chains have shut down in urban areas. Need for food assistance in many areas is up 25 percent.

* Our farmland preservation laws need rejuvenation. For example:

    - In fourteen years Act 442 has never saved a single farm.

    - Act 43 needs funding to be effective and to implement a purchase of development rights program.

    - Agricultural zoning under Act 284 continues to face an uphill struggle against challenges to its constitutional validity, and

    - Acts 515 and 319 are only holding actions in preserving our farmland.

Looked at individually, the danger signals may -- to some -- seem faint. In combination, however, they beam a warning that we are on the threshold of a crisis unless steps are taken to reverse the paths we are now on.

But we want to do more than wave red flags. The purpose of The Cornucopia Project is not simply to identify fissures and cracks in the existing order of things and predict a scenario of gloom and doom for our food system. On the contrary, the cornucopia is the image of what we want as a reality for everyone in the state, especially the consumer and the farmer who are intimately a part of the food system.

It is important that the above list of issues be looked at as everyone's problem. The above situation is not just the result of policies by our current leaders, nor is it strictly their responsibility. An impending food crisis touches us all. The consumer, farmer, food industry, agricultural researcher, and our elected representatives in local and state government are all responsible and all have things they can do to help transform our food system. Unfortunately, there are no simple solutions to such a complex problem, but there is no lack of constructive activities that can be undertaken.

To this end, the recommendations section of the report is tailored for all of us. There are things that the consumer can do as well as the farmer, food industry, researcher, and local and state policymaker. We all are in it together and it is together that we need to work to create the kind of food system that will assure our children and our grandchildren an affordable and secure supply of food.

WHERE DO WE STAND?

Last year we reported that Pennsylvania's food system was in trouble. Where do we stand one year later? This section shows where headway has been made, and alerts us to danger signals not reported last year.

First the good news. In one year we have seen our reliance on outside food sources decrease by 2 percent.[5] The number of farms declined less sharply than in preceding years. Some farmers have returned to conservation tillage practices. There has been a 6 percent increase in younger farmers (under age 35).[6] In spite of the drought, there were some increases in production in apples, peaches, pears, and winter wheat. Dairy products continued to be a significant export commodity.

Yet even with these improvements, we are a long way from standing on firm ground. Our reliance on food imports remains high, depleting our state coffers faster than they are being restored through our food exports. Our prime farmland is still disappearing and our farms are decreasing in number. Farm debt has risen considerably and farmers are beginning to put in more to produce their crops than they are taking out in terms of profits. Some farm supply companies and dealerships are closing down, feeling the effects of customer loss. Processors relying on local foodstuffs also cut back when farmers limit production or go out of business.

When one part of the food system starts to limp and falter, it has an unsteadying effect on every other part. In the long run, it is the consumer who will feel the full effect of this insecurity and instability as food prices rise, grocery stores close, and food availability decreases.

Food Imports

Considering Pennsylvania's position as the leader among the Northeast states in agricultural production, it is amazing that we continue to import 71 percent of our food. Although no one may be surprised that we import all of our coffee, tea, oranges, grapefruit, and bananas, it is very surprising how many other foodstuffs we continue to transport into the state which could readily be grown and raised here. While tossing their salads, Pennsylvanians should realize that most of the vegetables come from out-of-state: 99 percent of the lettuce, 87 percent of the celery, 85 percent of the cucumbers, 82 percent of the green peppers, and 68 percent of the fresh tomatoes. Few homemakers may know that many of the ingredients stirred in their beef stew have also traveled long distances before reaching the pot: 77 percent of the beef, 91.5 percent of the onions, 88 percent of the carrots, and 86 percent of the peas. To top their shortcakes, Pennsylvanians import 72 percent of their strawberries.[7] From such diverse states as California, Texas, Florida, and Idaho, 1,700 truckloads of fresh meats, fruits, and vegetables roll into this state each week.[8] In a few cases, we even import the very same foodstuffs we export. Take apples. Although last year we exported over 350 million pounds, we also imported 76 million pounds from as far away as the state of Washington.[9]

Since most of our food has journeyed thousands of miles to reach our plates, that is where 71 percent of our food dollars still go -- outside the state. During 1980, Pennsylvanians spent an average $1,023 per person for food, amounting to a $12 billion total food tab. Of this amount, $8.6 billion went for food produced outside the state, an average of $735 per person leaving Pennsylvania to pay for our daily bread. Although in 1980 we decreased our reliance on outside food sources by 2 percent, we increased the amount of money that left the state to pay for this food by $2 million. We have a long way to go before we even come close to where our food exports reach the dollar value of our food imports. The present difference is $4 billion.[10]

What do all these numbers mean? To the Pennsylvania consumer they dish up some disturbing news.

Our food supply is vulnerable. Because we depend on outside producers for most of our food, our supply is highly uncertain. An oil embargo or energy shortage, a labor dispute, a Med-fly invasion, a drought or crop failure in Florida or California -- any of these could lead to serious shortages. California produces over 40 percent of the nation's fresh fruits and vegetables and close to 50 percent of our processed fruits and vegetables.[11] Any failure along this supply line could have disastrous consequences.

The average U.S. city has under normal conditions a two to three day supply of food.[12] If any disruption in our food supply occurred, perishables would disappear from the stores almost immediately, according to a spokesman for the Pennsylvania Grocers Association.[13] With normal buying patterns, stores over 10,000 square feet might have canned goods for as long as a week; smaller stores without storage space would be empty sooner. If, however, people knew that a shortage was likely, a "food panic" could empty all the stores in less than a day.

Such scenarios are not mere fantasy; we've already had a taste of what they might be like. During the last oil shortage, grocery warehouses were out of almost 20 percent of all food items.[14] Because of inflation and the cost of money, grocery store, warehouse and food processor back-up inventories are even lower than usual. Winter storm warnings often cause local stores to empty out. If something similar happened on a state-wide scale, many of us would soon be hungry, and we wouldn't last long on the surplus supplies of ice cream, mushrooms, and pretzels produced in the state. If a supply disruption

Chart 1

Amounts and Costs of Vegetables Imported Into Pennsylvania Which Could Be Grown Here: 1980

	Amount Consumed in Pennsylvania (1,000 lbs.)	Amount Imported (%)	Money Leaving Pennsylvania (retail)[1] (dollars)	Transportation Cost[2] (dollars)
Broccoli	20,173.9	84.5	13,437,900	712,208
Cabbage	99,682.8	64.3	13,442,730	712,464
Carrots	72,388.7	87.8	17,926,200	950,088
Celery	86,629.1	87.1	54,022,600	2,863,197
Cucumbers	47,468.	85.1	26,000,330	1,378,017
Lettuce	295,488.3	99.3	210,079,240	11,134,199
Onions	121,043.4	91.5	31,238,140	1,165,621
Potatoes	585,043.1	31.4	77,055,550	4,083,944
Snap Beans	15,427.1	93.2	159,370,810	8,446,652
Sweet Potatoes	40,347.8	99.9	17,198,700	91,153
Tomatoes	135,283.8	68.4	18,529,590	982,068

[1] Value of imports less the amount that goes to retailer

[2] Based on 5.3 percent of retail value. (USDA, 1980 Handbook of Agricultural Charts, p. 39)

lasted long enough, social order in food-short urban areas could even break down. A serious food shortage in a city could have an effect analogous to the yelling of "fire" in a crowded theatre.

Transportation costs alone account for over $323 million each year, or over $887,000 each day, of our food imports bill. The charge for transporting just the fresh vegetables for our salads, stews, and casseroles came to $35 million last year.[15] Clearly we are paying a higher price for our meals than we have to.

Almost 4 percent of the food that is shipped to Pennsylvania from around the country never reaches our shopping carts because of waste that occurs in transportation, wholesaling, and retailing. Last year, this loss in Pennsylvania came to a staggering $89 million for fresh fruits and vegetables alone. Thirty-seven million pounds of fresh vegetables and fruits were damaged or spoiled in transit to Pennsylvania.[16]

In addition, food that has to travel cross-country must be picked before it is fully ripe, so both its flavor and nutritional value suffer. In short, we end up paying more for food of lesser quality.

Dependence on distant food also means drastic price rises if any problems occur. A study by the U.S. Department of Energy concluded that an energy shortage or reduction of 10 percent in our oil supply would lead to an increase of 55 percent in the price of fresh fruits and vegetables.[17] Our food prices are certain to rise as energy costs go up.

In addition, our state and local economy is weakened. Keeping more of our food dollars here would strengthen Pennsylvania. An economically healthy farming sector increases the strength of the whole region.

Every dollar of output from the livestock sector of farming generates $2.78 of total product throughout the economy on its way to final consumption.

Every dollar of output from the crop sector generates $1.81 of total product.[18] A strong farming sector not only generates income, but provides jobs for non-farm workers.

Comparison of Data: 1979 and 1980

In some ways Pennsylvania agriculture has improved in 1980, given the decline from 73 percent to 71 percent in imported food since last year. Although we still have a long way to go towards increasing our self-reliance, this two percent increase in Pennsylvania-produced foods is a step in the right direction. Unfortunately, this drop in our food imports is countered by a $2 million increase in the total amount paid to out-of-state food suppliers.

Although we can show gross comparisons between last year's and this year's food import data, it is very difficult to analyze changes in Pennsylvania's food production because of certain basic statistical problems.

Like most surveys, Pennsylvania crop production statistics are determined by sampling, based in part on the *Census of Agriculture*, by the U.S. Department of Commerce, which is updated every five years.[19] When a new census is released, production numbers are updated to reflect new census data. The end result is that data from the most recent production year is not always comparable with updated statistics. The magnitude of this statistical discrepancy is illustrated by various production figures. In 1979, snap bean production for the fresh market was listed as 3,300,000 pounds. The revised figure is 17,000,000 pounds! Winter wheat production for 1979 was originally given as 81.2 million bushels. When the revised figure was released, this total had dropped to 72.8 million bushels.[20] Such discrepancies in statistical reporting make accurate analysis of where our food system is and is heading exceedingly difficult. Without standardized data collection procedures it is possible that we could be heading in the worst possible direction and not know it.

Using the 1980 Crop and Livestock Summary of the Pennsylvania Department of Agriculture, we find that even with last summer's drought, Pennsylvania crop production posted a few increases. Apples climbed 7 percent; pears and peaches were also up. Winter wheat increased by 27 percent, a change attributed to a 6-bushel-per-acre rise in productivity. Dairy products remained a great export commodity, with butter showing the greatest increase. Unfortunately, these increases were matched by large declines in corn grain (down 21 percent -- 20 bushels less per acre) and potatoes (down 24 percent -- 6,000 pounds less per acre). In addition, fresh vegetables showed declines due to last summer's drought. Snap beans, cabbage, and tomatoes, all for fresh market, showed declines in production of 42 percent.[21]

It is encouraging that even under poor weather conditions Pennsylvania agriculture can achieve high levels of productivity. This is further evidence that in-state producers can provide more food to meet our consumption needs.

Amount of Agricultural Land

A more visible sign that our food system remains in trouble is the continued dwindling of the base of our food system -- our agricultural land. Paved over, converted to other land uses, or temporarily removed from productivity and classified as marginal land, our agricultural land (cropland and pastureland) declined by about 1 percent each year between 1967 and 1977. Development and agriculture vie for Pennsylvania's 4.4 million acres of prime farmland, 53 percent of which is currently under cultivation.[22] Level, well drained and requiring few conservation measures, prime farmland has always been favored for development. It is, however, a limited resource. Once we build on our prime farmland, agriculture will be forced to move to marginal, less productive land. Each year 52,000 more acres of cropland are irreversibly lost. An area the size of Pittsburgh is lost to agricultural production every 8 months.[23] This 81-square-mile area could provide Pennsylvania with over 80 percent of our annual fresh, frozen, and canned vegetable consumption.[24]

Not included in these figures are the additional acres that are isolated by leap-frog development, and either eventually removed from production altogether or severely inhibited by non-farm activities surrounding them.[25] This loss is especially severe in the southeastern part of the state, where the urbanizing pressures are most intense, and where the greatest percentage of highly productive soils (Classes I-II) are located.

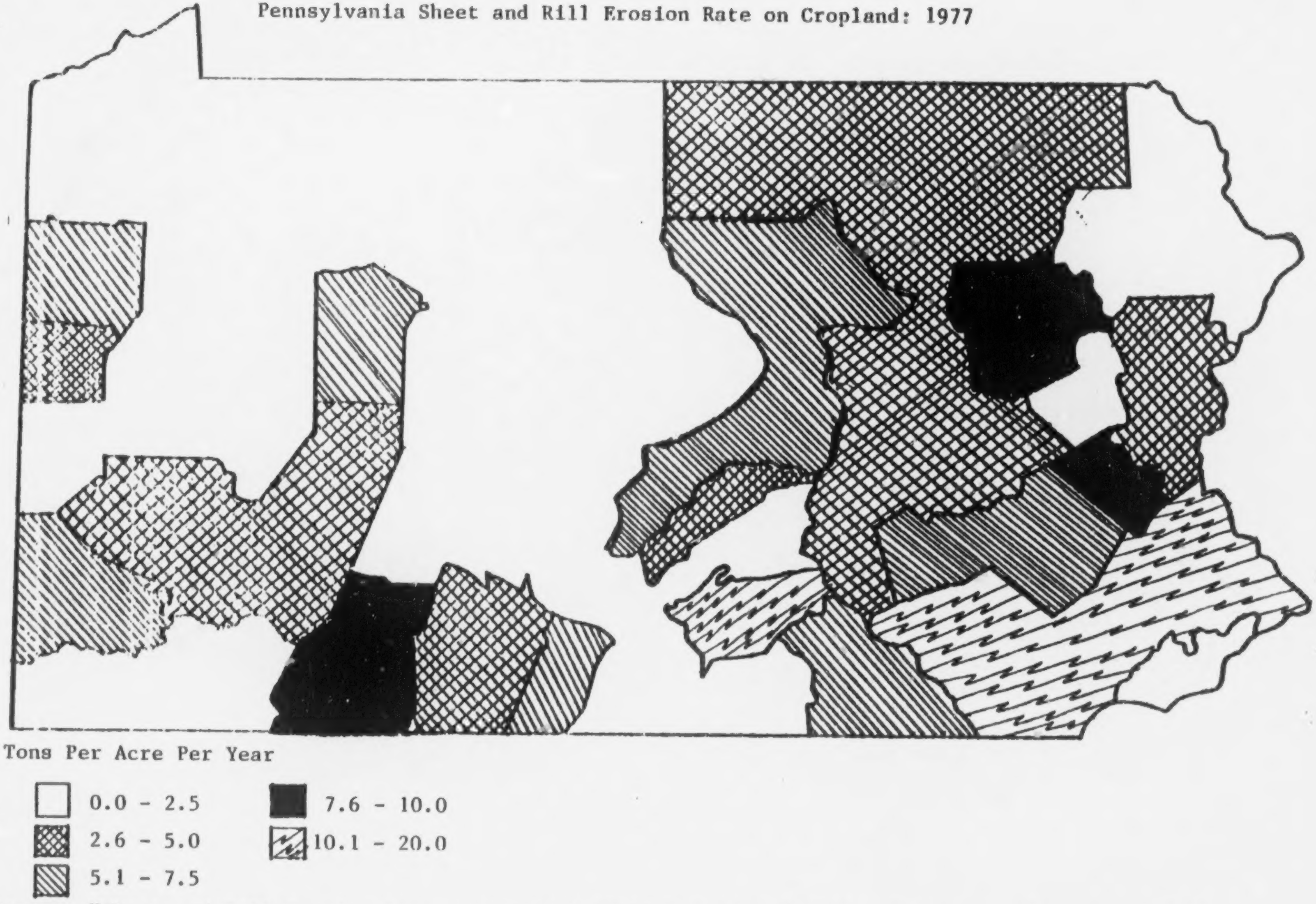
Although additional woodland and pastureland are being converted to cropland, this is occurring primarily on marginal land, with soils in Classes IV and VI, whose productive abilities are limited and whose need for capital outlays for soil preparation and conservation are much greater than those of the soils which are being lost. In spite of this conversion of marginal land to cropland, and a 1.4 percent increase in pastureland, the state still lost 6 percent of its productive agricultural land in the last ten years.[26]

Soil Erosion

"For sale" signs on farmland are not the only indications of our diminishing food base. Perhaps more insidious, because less visible and more cumulative, are the yearly losses of 50.7 million tons of topsoil from cropland, pastureland, and woodland due to sheet and rill erosion. Measured in acres, our topsoil loss continues to exceed 50,000 acres annually. This loss is enough to cover all four lanes of the Pennsylvania Turnpike from one end of

Chart 2

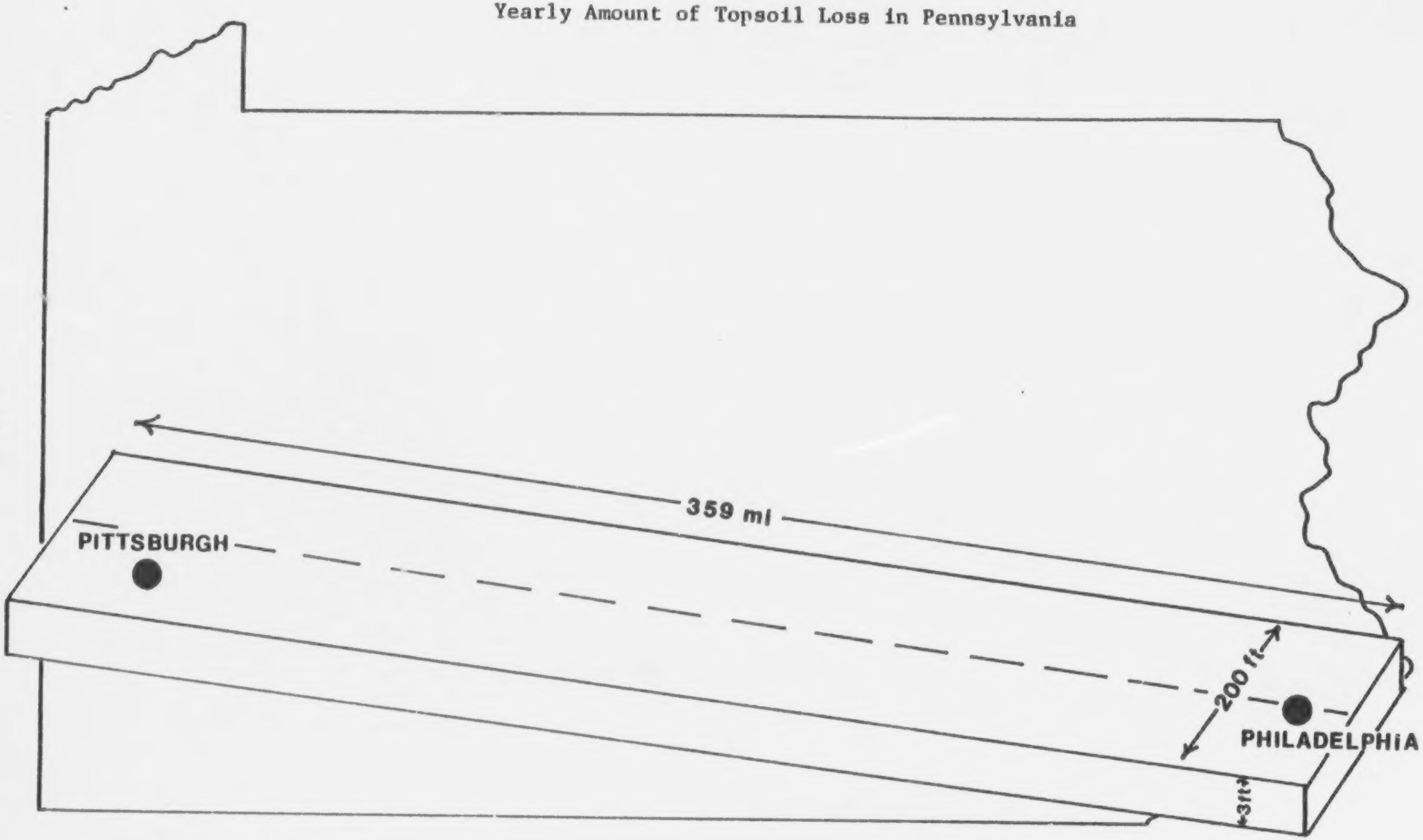
Pennsylvania Sheet and Rill Erosion Rate on Cropland: 1977


Tons Per Acre Per Year
☐ 0.0 - 2.5
▩ 2.6 - 5.0
▧ 5.1 - 7.5
■ 7.6 - 10.0
▨ 10.1 - 20.0

Source: "Sheet and Rill Erosion Rate on Cropland by State: 1977," National Resource Inventory, Soil Conservation Service, 1979.

Chart 3

Yearly Amount of Topsoil Loss in Pennsylvania


359 mi
PITTSBURGH
PHILADELPHIA
200 ft
3 ft

The topsoil loss in Pennsylvania is enough to cover the Pennsylvania Turnpike from one end of the state to the other with 3 feet.

the state to the other with 3 feet of topsoil.[27] Chart 2, "Soil Erosion in Pennsylvania," shows that the highest rates of soil erosion are occurring in the southeast region. Here soil is eroding 6-16 tons faster each year than the 3 to 4 ton maximum rate recommended by the Soil Conservation Service.[28]

Excessive erosion exacts heavy costs on our productive abilities. One acre-foot of eroded soil contains about 8,000 pounds of nitrogen and 2,000 pounds of phosphorus. Through erosion alone, we lose over 210 million pounds of nitrogen and 52.8 million pounds of phosphorus annually. This represents over $89 million at current fertilizer mineral costs. Each acre-foot of topsoil also stores 2 inches of available water for crops. With our current topsoil losses, we are washing away over 1.43 billion gallons of water each year,[29] and depleting the soil of its vital moisture retention abilities. Over time these decreases point to lower yields per acre.

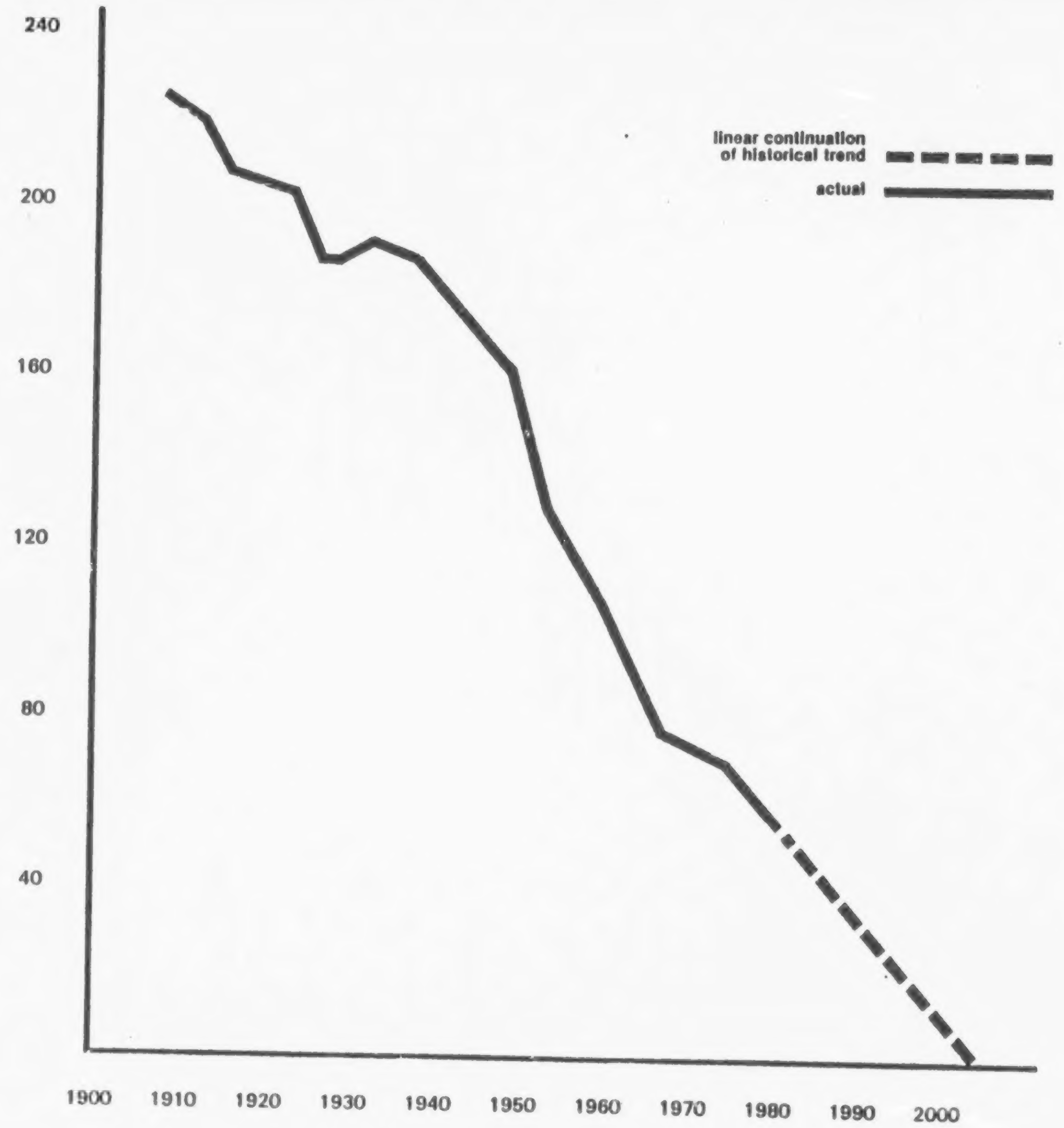
Although soil erosion data is updated only every five years, the most current reports by the Soil Conservation Service indicate an increase in conservation tillage in the last year.[30] Probably because of the 1980 drought, some farmers have opted for planting methods that disturb the soil less than conventional systems, thus enhancing the ability of the soil to hold water, and inhibiting erosion.

Farm Numbers

Related to the productivity of the land are the farms themselves, the structure through which our food is produced. Since 1950, Pennsylvania has lost 61 percent of its farms.[31] Last year alone we lost another 1,000 farms throughout the state, shrinking an already diminishing number to 61,000.[32] Although this loss of farms, at 1.6 percent per year, represents

Chart 4

Number of Farms in Pennsylvania 1900-2000



	number of farms
1940	182,000
1950	159,000
1960	106,000
1970	74,000
1980	62,000
1981	61,000

Source: Pa. Crop Reporting Service

less of a decline than the yearly average of 2.1 percent recorded between 1960 and 1980, it is still too soon to determine if the decrease in farms is leveling off. Even at this decreased rate of loss of farms, we are still heading toward the prospect of no farms in forty or fifty years.

Although the trend of a decreasing number of farms has not been reversed, there is at least one encouraging sign. The number of farmers under thirty-five has increased dramatically between 1974 and 1978,[33] possibly due to an increase in younger people entering farming on a part-time basis.

Farm Size

Strongly linked with the decline in farm numbers is the steady increase in farm size. Last year, the average farm expanded one acre, reaching 146 acres. Although a 1-acre increment may seem small, over the last thirty years, such changes have added up to an increase in farm size of over 62 percent.[34]

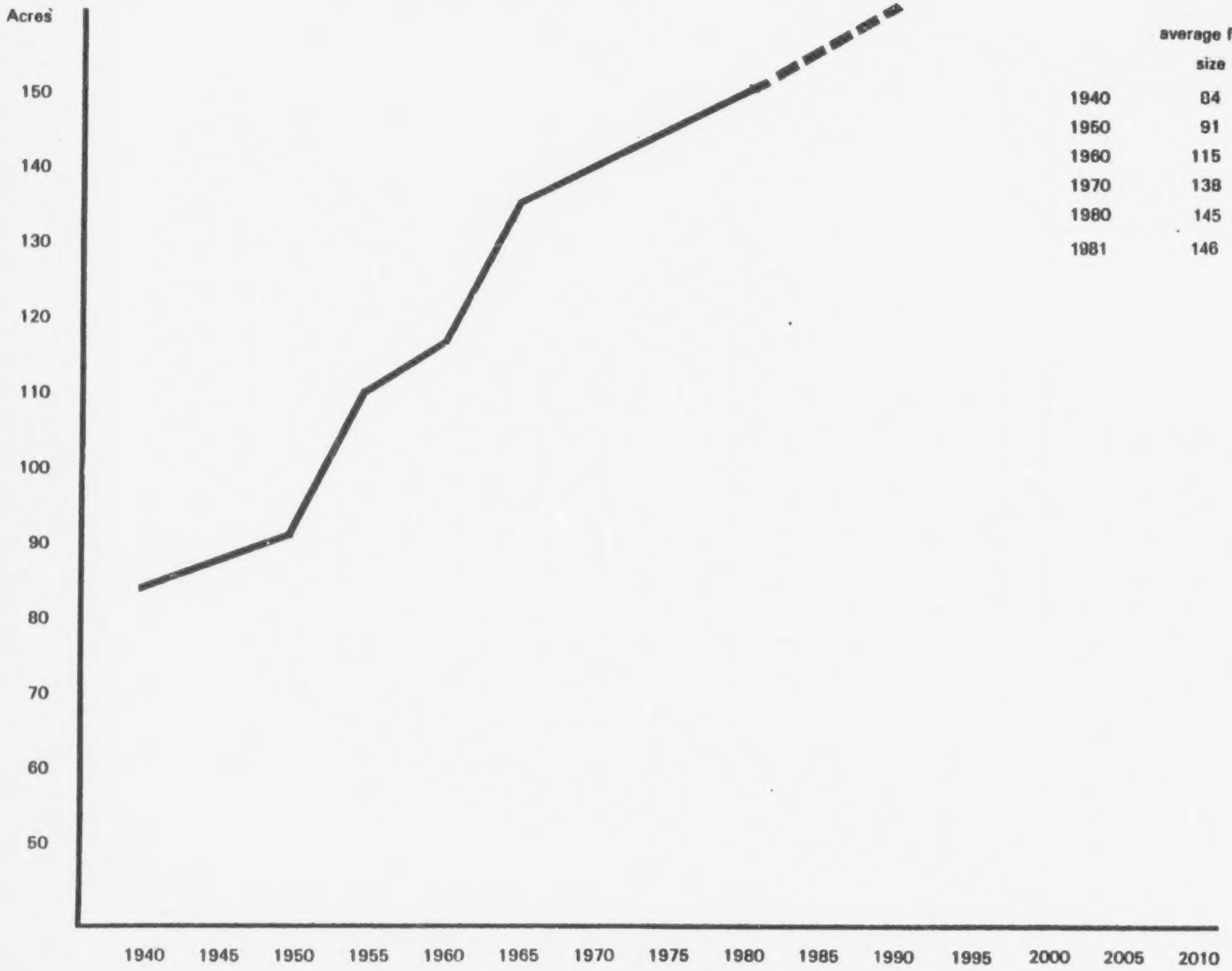
Pennsylvania farmers need to assess very carefully their present and future farming needs before turning to increased farm size as the only means of increasing farm productivity or income. Beyond a certain point -- yet to be determined for Pennsylvania farmers -- increased farm size is no guarantee of economic survival.

Farm Ownership

As the number of farms decreases, and as these farms become larger, control of Pennsylvania's farms is concentrated in the hands of fewer and fewer farm owners. As fewer people control the farms on which our food is produced, Pennsylvania's consumers become more vulnerable to decisions about the kinds of foods that will be available and the prices that will be charged.

Chart 5

Average Size of Farms, Pennsylvania 1940-1980



	average farm size
1940	84
1950	91
1960	115
1970	138
1980	145
1981	146

Source: Pa. Crop Reporting Service

Nationally, over half of all our agricultural land has changed hands since 1960. Each year between 2 and 3 percent of all farmland has a new owner.[35] Frequent change in ownership may indicate a decline in family-owned farms. High turnover hinders the thorough understanding and commitment to the land with which a farmer has been entrusted. Such commitment and understanding is necessary if tomorrow's land base is going to be as productive as today's.

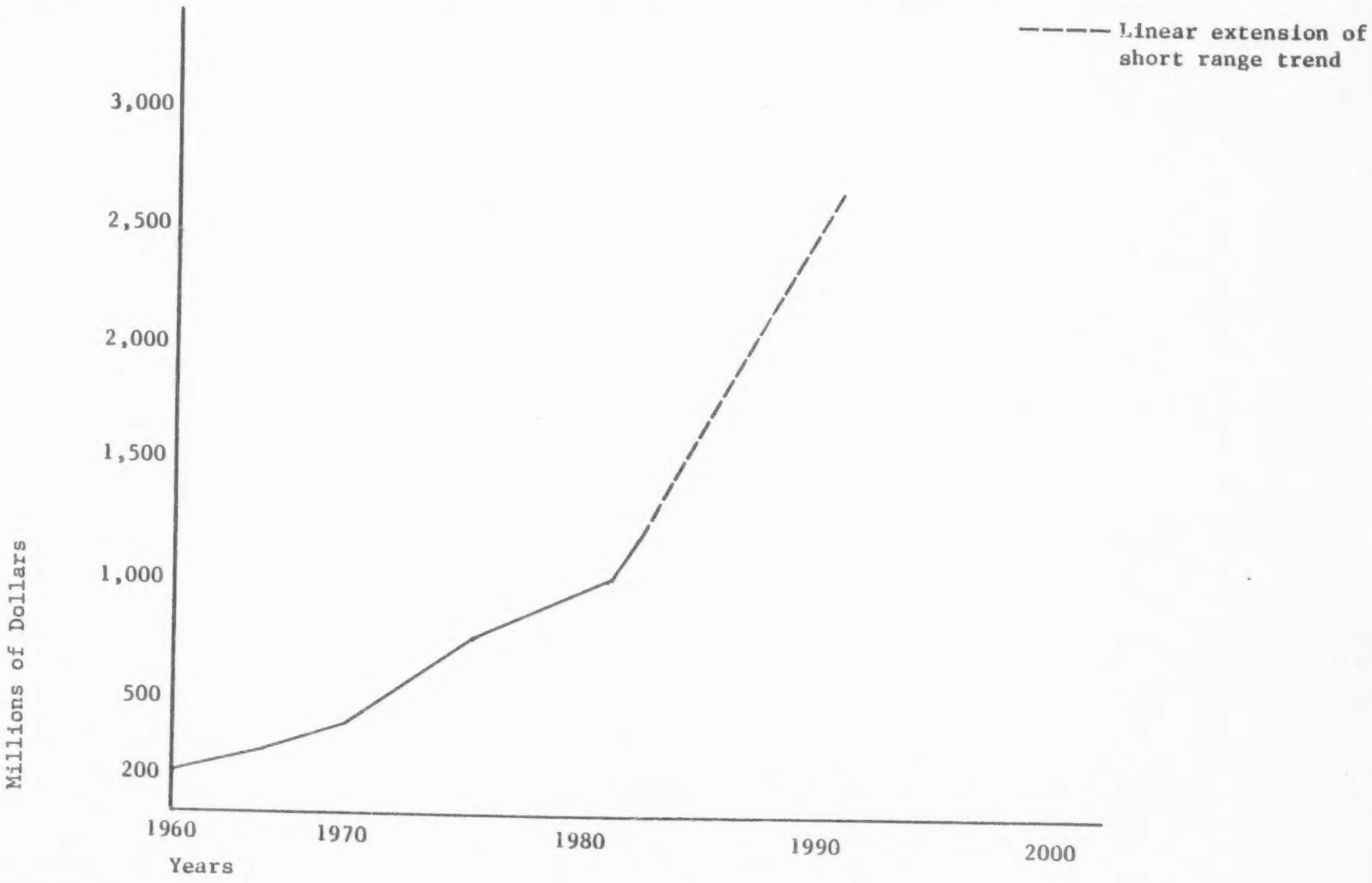
Farm Debt

A major reason for the high turnover of farmland ownership and loss of farmland and farms is the debt load which farmers carry, brought on by a combination of high capital requirements, increasingly higher interest rates, and low prices paid for farm products. Nationally, farm real estate debt rose 11 percent from 1980 to 1981.[36] Meanwhile, for the same period, Pennsylvania farm real estate debt rose over 14 percent to $1.4 billion. This is an average of about $23,000 per farmer.[37] A glance at Chart 6, "Pennsylvania Farm Real Estate Debt," will show that if long range trends continue, farmer real estate debt will be $2 billion by the year 2000.

A young person entering farming today may pay $2,000 to $3,000 per acre for land. At today's high interest rates, growing corn for $2.75 a bushel won't even meet the interest payments on this land.[38] Although those who have purchased farms within the last five to ten years may be more vulnerable to going out of business than those not as burdened with high interest rates, farm debt plagues the whole farming sector. In Pennsylvania, owners of farms as small as 40 acres and as large as 900 acres have been forced to sell out.[39] Right now there are a number of lending agencies that are unwilling to finance another year's production.[40]

Chart 6

Pennsylvania Farm Real Estate Debt: 1960-1980*



*Non real estate farm debt is not included.

Source: USDA, Ag Stats 1980 (Washington Government Printing Office, 1980), p. 477, Economic Indicators of the Farm Sector, SB 678, p. 190.

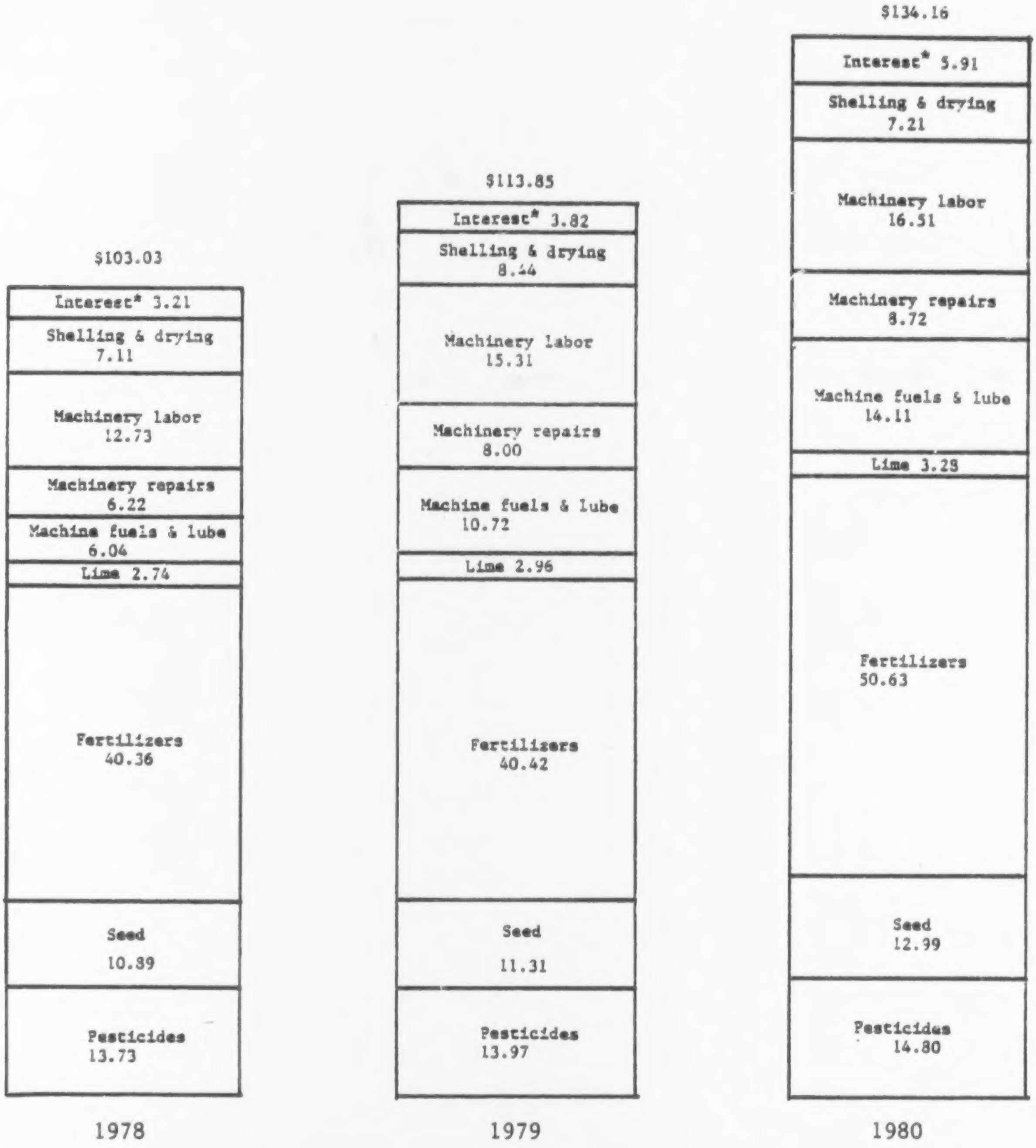
To help offset their indebtedness and to make ends meet, 57 percent of the farm operators in Pennsylvania are finding employment off their farm. For 38 percent of these, off-farm employment has become their primary source of income as they work 200 or more days away from their farm operation.[41] As a consequence, production on these farms is limited by the number of hours the farmer has available to work on the farm. Those who cannot get financial assistance for their operation, or those who do not want or cannot find employment elsewhere, are forced to sell out to larger operators or to developers who will pay as much as $5,000 an acre for flat, well-drained farmland.

Farm Inputs

Accelerating interest rates are only one reason for the increased debt load with which farmers are burdened. Another is the lessening margin of profit, the result of lowered prices received for some farm output, decreased yields for certain commodities, and higher costs of production. The variable costs of farm inputs have skyrocketed over the past three years. Take the production of corn for grain as an example. Chart #7, "Variable Input Costs: Corn For Grain," shows the leap in expenses between 1978 and 1980. Seed and lime costs increased over 19 percent each. Fertilizers jumped over 25 percent. Machinery costs were the most dramatic. Machine fuel and lube soared 134 percent, and machinery repair costs increased over 40 percent. Machinery labor costs rose nearly 30 percent. Not including fixed expenses such as land mortgage, taxes, depreciation, interest, and insurance, it cost Pennsylvania farmers 30.2 percent more to produce one acre of corn for grain in 1980 than in 1978, and 17.8 percent more between 1979 and 1980.[42] On the other hand, gross income for one acre of corn for grain rose only 11.5 percent between 1978

Chart 7

Variable Input Costs Per Acre for Grain Corn in Pennsylvania: 1978-1980

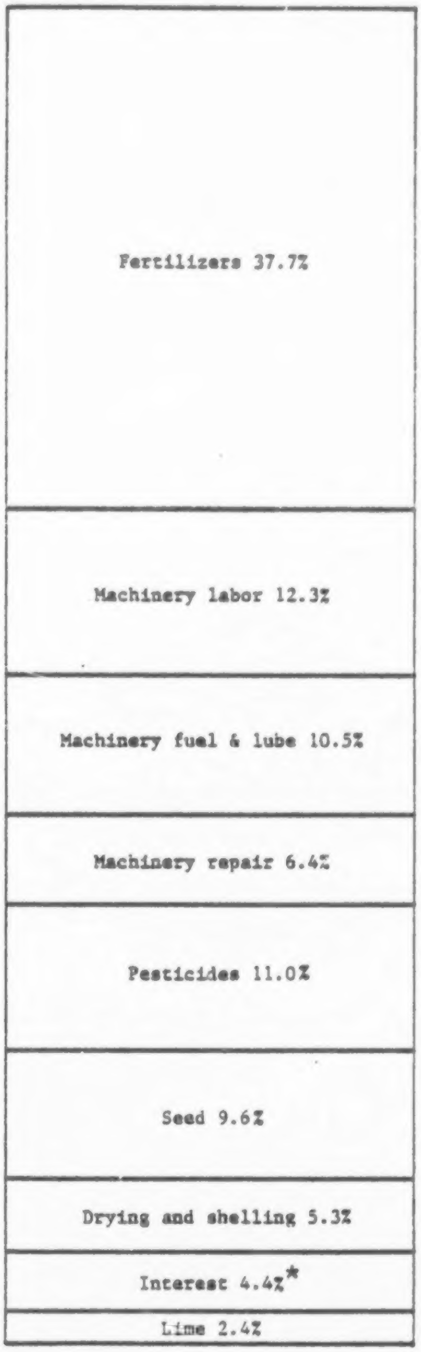


*Interest on operating capital

Source: National Economics Division, Economic Research Service, "Variable Input Costs: Corn for Grain" (Stillwater, OK: Oklahoma State University), unpublished, 1978-1980.

Chart 8

Variable Input Costs Per Acre for Grain Corn in Pennsylvania as Percentages of Total Cost: 1980



*Interest on operating capital

Source: National Economics Division, Economic Research Service, "Variable Input Costs: Corn for Grain" (Stillwater, OK: Oklahoma State University), unpublished, 1978-1980.

and 1980, and only 2 percent between 1979 and 1980.[43] Clearly farmers are beginning to put more in than they're getting out. And, unfortunately for the farmers, they are not always able to pass these costs on to the consumer.

Rural Economies

The loss of agricultural land, farms, and farmers has spin-offs on other businesses in the rural economy. Extensive economic activity is required to support primary agriculture and to process, transport, and sell the output of the farming sector.[44] In parts of the Midwest, farming communities are beginning to discover that they are not recession-proof. When farmers are attacked by high interest rates and soaring production costs, the entire community hurts.[45] Industries which provide farmers with their seed, fertilizer, feed, and equipment, as well as processing facilities, are affected when farms in the area go out of business. Among some farm supply companies, dealerships have dropped by as much as 20 percent over the last five years.[46] Dealers see a direct correlation between the decline of farmers and the discontinuation of dealerships.[47] High capital costs and soaring interest rates force farmers to buy less costly equipment, and use it longer before buying replacements, resulting in a slow turnover of high price tag equipment.

Processing operations -- dairies, broiler processors, canners, and packers -- also suffer when farms go out of business. Processors can be hurt when farmers cut back on their production and start to work off the farm. Without a steady, vigorous supply of agricultural products, these businesses could be forced to cut back production, or go out of business entirely. When farms and their support businesses fold, rural communities can be left with increased unemployment, sharp decreases in the sales of local businesses, and a diminished commercial tax base.

Pesticides

Pesticide costs per acre for corn rose almost 8 percent between 1978 and 1980. In the United States 846 million pounds of pesticides are applied annually,[48] about 3.7 pounds of active ingredient per person. In light of the national average, it would seem that Pennsylvania, at .5 pounds of active ingredient per person, is fairly conservative.[49] However, since the national figure is inflated by the huge quantities of pesticides used for cotton and peanuts, which are not grown in this state, Pennsylvania's pesticide rate is not as conservative as it seems at first. Thus far, only one study has been done to determine the extent of pesticide use on Pennsylvania's crops. However, this study was based on responses from only 2 percent of the farmers in Pennsylvania.[50] It is difficult to determine accurate statewide pesticide use, or abuse, from such a limited sampling. Unfortunately at the moment, this study is the best information available. The state simply does not collect pesticide information.

Pesticides that are carelessly applied can drift far from their points of application, killing crops and beneficial insect populations downwind. Pesticides washed off by heavy rains can find their way into our water supplies, and some pesticide residues remain on the fruits and vegetables we buy in the grocery store.[51] Further research is needed to determine the health and economic impacts of pesticides in Pennsylvania.

Fertilizers

In 1980, farmers spent $50 per acre for fertilizers for their corn-for-grain crops, an increase of 25 percent from 1979. Increased fertilizer application can lead to increased production, but many farmers routinely apply far more fertilizer than the soil needs or the crops can use. In a 1981 survey of soil testing labs, many labs gave conflicting results even though they were all given the same Pennsylvania soil to analyze. Some labs reported inadequate fertilizer levels and recommended large fertilizer dosages while others showed adequate levels of phosphorus, potassium, or nitrogen for the same fields, but still recommended increased fertilizer applications. Residual levels of potassium, phosphorus, and nitrogen in soils are frequently overlooked or ignored, leading to additional applications of fertilizers that increase the farmers' production costs, but give no appreciable increase in yields.[52] In many cases farmers may be increasing their production costs unnecessarily.

Fertilizers are the most energy intensive agricultural input. In Pennsylvania they account for about 35 percent of all the energy used in farming.[53] Even with a 1.5 percent decrease in fertilizer use from last year, our current 653,376 tons of application may be too high.[54] Over-application of fertilizer results in wasted energy as well as wasted money.

A high dependence on chemical fertilizers means dependence on a diminishing mineral base, resulting in increased imports of phosphate, anhydrous ammonia (for nitrogen), and potash (for potassium). U.S. supplies of phosphate are expected to dwindle rapidly after the year 2000. At the same time, 90 percent of our potash will be imported. Anhydrous ammonia is made from a process that uses natural gas, another limited and expensive resource.[55]

Already Pennsylvania farmers use 94 percent of their collectable manure -- 686,233 tons dry weight -- for fertilizer. Only about 25,126 tons need to be disposed of.[56] With rising chemical fertilizer costs, this small surplus won't begin to meet our fertilizer needs.

Food Industry

Although state, county, and local governments are beginning to take a closer look at problems with the production sector of our food system, it is also important to look at other components, including processing. Vital to our state economy and to meeting local food demand are Pennsylvania's 1,529 food processing companies, which package, can, freeze, dry, and refine a wide variety of the foodstuffs we consume.[57] These foods range from vegetables, grains, fruits, meats, fish, and dairy products to candy, potato chips, chewing gum, ketchup, soft drinks, wine, and coffee. Of special interest is that 95.8 percent of our food processors are headquartered in-state.[58]

Unfortunately, between 1954 and 1978, the number of food manufacturers declined by 48 percent.[59] Mirroring the nationwide trend, many of Pennsylvania's smaller plants were absorbed into larger companies or closed down. Plant number declines were most pronounced for dairy products, poultry and eggs, canned fruits and vegetables, pickles, sauces and salad dressings, bakery goods, and beverages. Even though milk production is one of Pennsylvania agriculture's strong points, the number of milk dealers has declined by 81 percent in the last 30 years. In the same time period, the number of producer-dealers -- farmers who process and retail milk from their own herds -- has dropped 91 percent. Corresponding to this decrease in food processors was a 17 percent decline in employment among production workers from 1954 to 1977.[61]

of these were conventional supermarkets, stores under 30,000 total square feet,[66] which have typically serviced local communities. At the same time, there has been a 54.2 percent increase in "super-stores," those with over 30,000 square feet. These "super-stores" are not a replacement for the food needs of the inner-city elderly and lower income residents who cannot afford to travel great distances to these usually suburban mammoth food stores.

Since late in 1981, A&P has closed 50 stores in Pennsylvania. Finally in March of 1982, the decision was made to eliminate the Pennsylvania regional headquarters, and to service the remaining 41 Pennsylvania stores from other divisions.[67] A&P's closings are by no means an isolated case. Increased competition, higher operating costs, and a slow economy have taken their toll on most grocery store operators, forcing two Philadelphia chains to terminate since 1975.[68] The decline in grocery stores is reflected in the 25 percent drop in the number of paid grocery store employees between 1967 and 1979.[69]

For some people in Pennsylvania food is not easily accessible, and for a growing number of people, food is simply unaffordable. High unemployment, rising food costs, and budget cuts in federal food assistance programs are putting an adequate diet beyond the means of many Pennsylvanians. Churches that formerly had one or two people per week requesting food are now feeding 20 people a week.[70] In the Lehigh Valley, both government programs (Food Stamp Program, Women Infants and Children Feeding Program) and private sector groups (Meals on Wheels, Salvation Army, church soup kitchens and food banks) report increases of up to 25 percent in the number of people requesting food assistance in the last year.[71] Currently, there are no statewide statistics on all the food assistance programs available in Pennsylvania. Not only do we not know how many Pennsylvanians are currently receiving some form of food assistance, but there is no information on how many people require it

More than 80 percent of our meat, dairy products, and bakery products are brought to us by truck. Transportation accounts for 5.3 percent of our food expenditures.[62] Obviously, transportation costs are higher for foods shipped to us from processors outside of Pennsylvania who are several thousand miles away.

Farmers who are able to sell their produce to in-state processors often receive a better price for their goods because transportation costs are lower. Pennsylvania-based processors may also be more inclined to deal with smaller in-state farmers. Large national or regional multi-product processors tend to buy wherever they can get the volume and quantity to support their nationwide or regionwide marketing programs.[63] Instead of contracting with local farmers to produce vegetables for their processing operations, some large in-state processors in Pennsylvania procure 60 to 70 percent of their produce from growers in California, Iowa, Michigan, North Carolina, Indiana, Illinois, and Ohio.[64] Although it is understandable that processors go out of state to obtain foodstuffs that cannot be grown here, such as chick-peas, pigeon peas, and dried beans, there is no reason why Pennsylvania soils cannot supply more onions, cucumbers, apples, and tomatoes and other locally grown foods to local processors.[65]

Food Availability

Most consumers in Pennsylvania come in closest contact with their food at the end of the production, processing, and distribution chain -- at their grocery store. Keenly felt by many inner-city and suburban residents in Pennsylvania are the closings of local supermarkets and the absence of nearby grocery stores to conveniently and economically meet their food needs. Nationwide, 4.2 percent of all the supermarkets closed in 1980. Ninety percent but are not receiving it. Clearly, accessible, affordable food is not yet available to all the people of Pennsylvania.

RECOMMENDATIONS: PLANNING FOR REGENERATION

Developing a secure, sustainable, and affordable food supply is the major goal of The Cornucopia Project. To attain this goal will require a great deal of effort on many levels -- from consumer and farmer to industry and government. The Cornucopia Project has developed a set of recommendations for Pennsylvania that could help create a more vibrant state economy, a more secure and affordable supply of food, and an environment that is sustainable into the 21st century.

The major strategic themes running through all of the recommendations are outlined below. These four points are the most important and deserve the highest priority. They are followed by a series of more explicit recommendations aimed at the various participants in our food system -- namely, the consumer, who is the foundation of the entire food system and who has the most power to change it; the farmer, who produces our food; the food industry, which processes and distributes our food, and which has the power to improve our food system in relatively short order; the cities, which will be hit hardest by any food crisis; the state, which has the power to do many of the things necessary to make Pennsylvania's food supply secure; and the research community, which can improve the system we now have.

MAJOR STRATEGIC THEMES

I. Pennsylvania Should Grow More Food for In-State Consumption

Growing more food in-state will help the Pennsylvania economy by keeping more food dollars in local areas, by reducing the $304 million food transportation bill, and by creating jobs and increasing state revenues. Food will also be fresher and taste better, not having been subjected to early harvesting and long-distance transportation. Far less energy will be consumed in getting food from the field to the table. To produce all our food needs (with the exception of those items which cannot be grown here due to climate, e.g., coffee, tea, cocoa, citrus fruits) would require 15,835,500 acres.[1] In 1977 (most recent data available), we had 5,661,000 acres of cropland available with an additional 1.4 million acres of land having medium to high potential for conversion to cropland.[2] This total is 7,091,000 acres. To produce all our food needs with the additional exception of beef, we would need 8,565,658 acres. Subtracting pastureland for dairy cows from this gives a total of 6,008,751 acres of cropland.[3] As this figure points out, Pennsylvania could be largely self-reliant in almost everything except beef. But we cannot be completely self-sufficient with current consumption patterns and it is highly questionable if we even should be, but there are numerous ways to increase Pennsylvania's food self-reliance and the viability of the state economy.

For example, if Pennsylvania increased its animal production and meat processing to meet 100 percent of our meat consumption needs, this could create over 122,000 additional jobs through increased processing plants, feedlot operations etc.,[4] and would provide over $196 million worth of fertilizer minerals -- containing 4.2 times the nitrogen, 1.7 times the phosphorus and 2.4 times the potash that was used in 1980 by Pennsylvania farmers.[5] By processing this 4.44 million tons of manure in anaerobic digesters we would also be capable of generating 42.6 billion cubic feet of methane worth nearly $191.7 billion.[6] The residues from this methane production would have all the fertilizer content that the original manure had.

If Pennsylvania simply increased its chicken (broiler) production from the current 321 million pounds to the 593 million pounds which its residents consume, it would add nearly $300 million to the state's economy[7] and provide 3,617 more jobs.[8]

Given our land limitations, and our current consumption patterns with their heavy reliance of beef, it is not currently feasible to produce all of our meat in-state, but as these figures clearly demonstrate, there is a very large potential for increasing meat production and many advantages in doing so.

Another possible way to increase Pennsylvania's self-reliance and the vitality of the state's economy is to boost our production of vegetables and fruits to meet all our needs. Self-reliance in vegetables would not necessarily require large changes in our diet. With Pennsylvania's climate, soils and growing season, many more fruits and vegetables can be grown. The total acreage needed to produce all fresh fruit and vegetables and vegetables for freezing and canning comes to 389,840 acres, just a little over 5 percent of our current total cropland.[9] All our vegetables could be grown on land that is now producing hay. Just a little over half of that acreage (53% of Class I, II, and III land designated "occasionally improved hayland") would provide for all the state's vegetable needs.[10]

In addition, the state has over 300 acres of greenhouses which could satisfy part of our out-of-season vegetable needs.[11] Twenty-eight percent of the vegetables and 38 percent of the fruits we consume are frozen or canned. We could easily grow and preserve this amount in-state. If we put more emphasis on eating seasonally and regionally, on producing more food in greenhouses, on growing a wider range of crops suited to cold weather, and on producing the same amounts of fruits and vegetables for preservation that we now consume, we could meet 100 percent of our vegetable and fruit needs from Pennsylvania-grown crops.

Pennsylvania would have much to gain from increased vegetable production. Merely increasing cabbage production by 180 percent (to a total of 5,220 acres) to meet all our consumption needs would generate $11.5 million worth of economic activity in the state.[12]

Home gardens can provide a substantial portion of our vegetable needs. Already almost 50 percent of our households have gardens.[13] Average cost of inputs is low -- $25 covers seed, soil preparation materials, lime, manure, mulch, and water -- and return on investment is high. Last year the average-size garden in Pennsylvania yielded about 492 pounds of produce worth $414. The return on the investment was 1656 percent including labor. This is for approximately five hours of work or less per week.[14] If every one of the 4.2 million households in Pennsylvania had a garden which yielded 712 pounds of produce (a feasible goal given intensive gardening techniques), we could meet all of our fresh, frozen, and canned vegetable needs from just our gardens. This is unlikely to happen, but our current gardens already have the potential to grow enough food to meet 35 percent of the state's total vegetable needs.[15]

II. Pennsylvania Should Encourage Local Markets

The benefits of buying locally as much food as possible are numerous and include lower transportation costs, less energy consumed in transportation, less waste due to long distance hauling, and potentially more nutritious produce since vitamin and mineral content decreases with time following harvest. Local farmers benefit as much as consumers because they have a market for their produce which will pay more than an interstate broker. U.S.

Department of Agriculture studies of direct markets in Colorado showed that local farmers received 44 percent higher gross returns if they sold locally than if they marketed through wholesale channels. Consumers received an average 28 percent discount compared to supermarket prices.[16] A study in New York City showed price savings ranging from 7 to 35 percent.[17]

One quick and inexpensive way to augment Pennsylvania's existing marketing program would be to conduct and publish a survey of all food producers and large-volume food buyers -- such as grocery stores, hospitals, industry, and restaurants --to determine what farmers would produce, given a market, and what institutions would purchase, in terms of commodity and quantity. Farmers would know what the market was and buyers would know where to obtain fresh, wholesome produce. If such a survey were conducted on a local level for each of Pennsylvania's ten planning regions, either by the state's Department of Agriculture or local authorities, both producers and consumers would benefit.

III. Pennsylvania Should Maintain Its Farm Resource Base

Soil is the foundation of one of Pennsylvania's largest industries.[18] And so it is imperative that attention be given to the tons of soil being washed away irretrievably into our streams, rivers, and lakes. Once the soil is lost, there is little hope of producing food for anyone, let alone of attempting to make our state more self-reliant.

Preservation of Pennsylvania farmland can no longer be a debatable issue. We need all our prime farmland. We can no longer afford uncontrolled, rampant development on our best lands.

Farmers are critical components of our food system. Efforts must continue to make their livelihood profitable, sustainable, and accessible. People who wish to farm must have the financial and technical support to do so. Farm support services must be maintained to provide essential materials and services to the farm community. Farm equipment dealers, seed and fertilizer salespeople, feed mills, and agricultural credit associations as well as the cooperative extension service supply some of the necessary inputs to the farm sector. The strength of Pennsylvania's farm resource base is dependent upon these component parts. Support services are no less important than the other elements.

IV. Pennsylvania Should Continue to Expand Consumer Education and Awareness

Informed consumers can actively participate in working towards sustainability and regeneration in the food system. Consumer demand can effectively influence the Pennsylvania food industry more than any regulatory or legislative action. Individuals can also have a tremendous impact on local grocery stores and their purchasing policies simply by asking for locally-grown, locally-processed foods. Increased consumer awareness and action may be the single most effective force in changing the direction of Pennsylvania's food system.

The following set of recommendations offers more detailed analyses of what consumers, farmers, the state and local governments, the food industry, and our research community can do to regenerate Pennsylvania's food system.

RECOMMENDATIONS TO CONSUMERS

1. Become more active in your food system. Increase your awareness of what foods are locally produced and which are transported in from other areas of the country. Know the nutritional quality of the food you consume. Share information with friends, neighbors, and supermarket and grocery store personnel.

2. Form a local Cornucopia Project consisting of people who want to work at changing some aspect of their food system. Possible activities include establishing home and community gardens, bartering, cooperative food buying, storing and preserving, setting up food banks, and gleaning from harvested fields.[19]

3. Purchase locally-grown fruits and vegetables in season, taking advantage of their peak nutritional value and decreased cost. You can also process these foods and store them for cold weather months to eliminate higher commercially processed and packaged food prices.

4. Support your local farmers by purchasing food directly from growers, thereby increasing their needed financial support while enjoying fresh, nutritious foods at reasonable prices. Start food co-ops and for additional savings, contract with farmers in the region to produce some of your food.

5. Change your eating habits to improve and maintain your health by consuming less fat, salt, sugar, and cholesterol while increasing fiber and vegetable protein intake.

6. Start a home garden to produce more of your own fruits and vegetables. Community gardens provide a greater selection of produce when the harvest is shared with cooperating gardeners. They offer access to land for those (especially urban residents) who might otherwise be unable to garden.

7. Extend your growing season by building solar grow-frames and/or utilizing container gardening.[20]

8. Starting a land trust which could purchase critical agricultural properties as they come on the market, resell them with deed restrictions to new farm owners, or transfer them to other appropriate trusts or to the city, county, or state at some future time. A land trust is a non-profit corporation which is able to own real property or interest in real property. It is one way to offer permanent protection to selective farming areas within local communities.

RECOMMENDATIONS TO FARMERS

I. Farmland Preservation

1. Take advantage of existing laws. Farmers should become better informed about specific state and local laws which can benefit them. These include: current use value assessment (Acts 319 and 515), forming agricultural areas and receiving eligibility for purchase of development rights (Act 43), obtaining preferential valuation of agricultural land for inheritance taxes (Act 207), and receiving exemptions from capital stock tax for family farm corporations (Act 179).[21]

2. Learn about the opportunity to donate agricultural conservation easements to the American Farmland Trust through the Pennsylvania Farmers Association. With such a donation farmers now can receive an income tax deduction equal to the value of the easements under a 1980 revision of the Internal Revenue Code, P.L. 96-541. The recent donation of agricultural conservation easements in Snyder County is to be lauded as a step in the right direction.

3. Learn about the diversity of technical assistance and services available to farmers through local conservancies and land trusts, which can show them the best options for the future use of their land, including areas which are not essential to farm production. This kind of planning service would help farmers realize certain economic benefits while still maintaining and preserving their farm operation.

4. Preserve farmland by markedly decreasing soil erosion. Your local soil conservation district will provide you with assistance in developing or updating a soil and water conservation management program, suggesting strategies to build the soil and reduce the need for increasingly costly fertilizer inputs.

5. Reduce soil losses through combinations of structural and management practices, such as conservation tillage, cropland terraces and diversions, contour farming, the use of crop residues, winter cover crops, and hedges.[22]

6. Take land that is severely eroding out of production.

7. Use marginal lands for grazing livestock instead of crop production.

8. Have soils tested accurately to determine the nutrient value of the soil and its fertilizer needs in order to prevent overuse of costly, energy-intensive fertilizers. Beware of inaccurate soil testing services.

II. Farm Inputs/Resources

1. Diversify production with selected combinations or rotations of crops or an interplay of crops with livestock. This practice would reduce fertilizer and weed control costs while providing the farmer with greater market stability.

2. Diversify production regarding not only types of crops but individual strains of a single crop so as to reduce the risk of farm pests blighting the entire crop.

3. Reduce energy use by investing in more fuel-efficient machinery, looking into solar dryers, letting crops dry naturally whenever possible, adding insulation where feasible, and taking advantage of natural lighting in farm buildings. Investigate possibilities for using alternative energy sources, whether this be the conversion of manure into methane or the use of solar heat for crop drying and other on-farm energy requirements.

4. When dealing with different soil types in large fields, consider reducing field size for maximum ecosystem diversity. This would establish a healthier ecosystem which can vary greatly in one large field.[24]

5. Consider using management practices that will reduce the need for chemical fertilizers, pesticides, and other expensive inputs.

6. Investigate possibilities for using alternative energy sources, whether they be the conversion of manure into methane or the use of solar heat for crop drying and other on-farm energy requirements.

7. Develop on-farm fertilizer sources by growing nitrogen-fixing legumes and green manure crops.

8. Utilize marginal land in combination with more productive soils and proper management to maintain more cattle, thereby increasing beef and organic fertilizer production.[25]

9. Avoid routine spray schedules. Apply pesticides only when needed and target spraying to delay the onset of insect resistance, reduce undesirable residues, do minimal damage to beneficial insects, and decrease costs.[26]

10. Consider alternatives to pesticide use and/or reduction. These could be: integrated pest management involving monitoring pest levels for proper timing of applications, no-tillage, crop rotations and interplanting, narrow rows or broadcast seeding to establish a canopy sooner than with wide row spacing, and biological control of pests to maintain the natural ecosystem.[27]

III. Marketing/Economics

1. Organize marketing co-ops to provide restaurants, schools, and other institutions with locally-grown produce.

2. Work cooperatively with the consumer by selling directly to the public. This will ensure a higher price for the farmer's goods and fresher produce for the consumer at a lower cost.

3. Locate marketing centers strategically for the assembly, grading,

packing, and distribution of the output from many small producers thereby providing large buyers with the volumes and specifications they require.[28]

4. Consider small-scale processing on the farm such as processing sausage, cured meats, pickles, preserves, cheeses, etc. Fresh produce can be washed, sorted and packaged for sale to restaurants and markets. Dried beans, nuts, and seeds as well as honey can be sold to food stores and restaurants.

5. Investigate before planting what specific varieties of crops purchasers wish to buy by surveying bulk food purchasers in your area.

6. Sharpen marketing skills by examining price movements to forecast supply and demand. De-emphasize concentration on farm production while allowing time to think, plan, read and analyze the current market so as to obtain a better price for agricultural products.

7. Extend the availability of some produce by staggering planting and harvesting dates between the last frost date of the spring and first frost date of the fall and by selecting varieties with varying periods of maturation. For example the fall/winter oriental vegetable crops being developed at the Rodale Research Center are capable of extending the growing season in Pennsylvania.

8. Begin to work towards changing grading and marketing standards that reflect the nutritious quality of the crop rather than its uniformity and appearance.

9. Seek to reduce debt to manageable levels.

10. Encourage local newspapers, if a section is not already provided, to devote columns to farm problems and a listing of local/seasonal food availability.

RECOMMENDATIONS TO LOCAL GOVERNMENTS

1. Aid and encourage local food production and distribution by instituting a department to regulate and protect agricultural land use, encourage urban and rural food production, develop urban markets for local produce, initiate educational programs, and create plans to meet normal and emergency local food needs through local production and storage.

2. Identify the long- and short-term costs to a township before converting any prime farmland to development use.[33]

3. Develop and encourage local food production by:

   a. Establishing city-run gardens in low income areas, and/or providing seeds, tools, and technical assistance on gardening to those receiving food stamps and other kinds of food assistance.

   b. Providing funds to establish gardens and/or greenhouses and subsidizing gardens in schools, prisons, hospitals, and nursing homes.

   c. Establishing community farms on urban fringes to be worked by local farmers or interested city residents.

   d. Promoting contract growing whereby groups of urban families, co-ops, or the city itself arranges to purchase food directly from a local supplier.

   e. Developing loan funds for food self-reliance projects, such as greenhouses, food preservation and storage operations, and small businesses associated with urban agriculture.

   f. Establishing urban agricultural testing programs with the state Cooperative Extension Service to test crop varieties, analyze soil for nutrients and pollutants, test crops for pollutant residues, prepare demonstration sites for various types of urban agriculture and waste recycling, and offer technical assistance on farming as well as design and construction of community greenhouses, cold frames, rooftop gardens, etc.

   g. Encouraging local industries which produce low grade waste heat to make use of this energy by producing food in attached greenhouses.

   h. Requiring garden areas in new multiple unit housing projects.[34]

   i. Making certain that urban street tree programs preserve solar access for food production.[35]

4. Develop and encourage local markets by:

   a. Establishing farmers' markets in the city, particularly in low-income neighborhoods, and facilitating authorizations for farmers to accept food stamps at the markets.

   b. Creating mobile farmers' markets and/or fish markets to visit housing projects, neighborhood centers, factories, and universities.

   c. Assisting in the formation of food cooperatives, co-op stores, and preservation/storage centers.

5. Develop and encourage local food processing and storage by sponsoring community food preserving facilities where residents use this service free or at a low cost and/or providing incentives to grocery stores to establish food preserving facilities for their shoppers.

6. Facilitate access to food by implementing a "food hotline" to provide referrals for emergency food, food stamps, and meals for elderly.

7. Create a greater understanding of the importance of agriculture to urban areas through educational programs. Offer seminars in urban agriculture, aquaculture, container and rooftop gardening, food preservation, storage preparation, and nutrition. (See AGRI-LEARN under Recommendations to State).

8. Establish food banks in your area to store and distribute surplus food.

9. Have county institutions purchase their food supplies from local farmers.

10. Preserve the remaining farmland in the vicinity by creating agricultural open-space preserves to retain prime farmland for agricultural use as in Lancaster County.

11. Set aside areas for recycling facilities.

12. Investigate the benefits of joint municipal planning. Amendment, Article XI-A, to the Municipalities Planning Code gives municipalities authorization to work together to enact and adopt joint municipal comprehensive plans and joint municipal zoning ordinances. This process of joint planning could be particularly beneficial for those communities wanting to adopt some form of agricultural zoning and/or transfer of development rights ordinance. The Newtown Area Joint Planning Group in Bucks County is one example of municipalities engaged in joint municipal planning.

13. Consider applying part of the monies from the real estate transfer tax to a local purchase of development rights program.

14. Investigate land use techniques like clustering, performance controls, and transfer of development rights which would give farmers greater options to develop either on the farm or in othe

areas within the community or region.

15. Establish an Agricultural Development Council similar to the one in Chester County. This council would focus on generating economic solutions to the problems of farmland loss in the counties. These local agricultural development councils would be comprised of people from the entire food system in the county and include farmers, processors, distributors, store managers, and farm service equipment dealers, as well as realtors and bankers. The council could develop local markets for local producers. It could survey local producers to see which ones would grow produce for local consumption and survey local stores, restaurants, and institutions to encourage them to purchase more locally grown foodstuffs. The council could also determine where local food is coming from and could promote more consumption of local foodstuffs. As suggested by Chester County, the council could become involved in "farm brokeraging" which would match new farmers with those who want to sell.

16. Increase the effectiveness of the soil erosion and sedimentation control measures under the Clean Streams Law by participating in (through local conservation districts) the enforcement of the law at the local level. Section 102.41 (a) of the Erosion Control Rules and Regulations allows the Department of Environmental Resources (DER) to "delegate the administration and enforcement of the provisions of this Chapter to counties and other units of local government." Of the 66 conservation districts there are only two, Lancaster County and Northampton County Soil Conservation Districts, which have contracted with DER to enforce the provisions of the soil erosion and sedimentation control measures. Although it is encouraging that 50 have agreed to inspect earthmoving activities (level 5 of the program), more should be willing to move to level 6 which gives them enforcement. Local enforcement is usually much quicker than enforcement through DER. DER is willing to provide local conservation districts with cost sharing in order to encourage their participation.[36]

17. In addition to enforcing the soil erosion and sedimentation control measures, pass local ordinances similar to the one in Sterling, Wisconsin, which is successfully conserving all agricultural lands over 1 acre in size with a slope greater than 6 percent.

18. Undertake joint cooperative agreements, Memorandums of Understanding -- as currently being carried out in Lancaster County -- with your local conservation district whereby Township Supervisors enable the district to review subdivision plans for adequacy of erosion sedimentation control and stormwater management, and give it permission to inspect earthmoving activities to insure implementation of erosion and sedimentation control practices.

19. Investigate the agricultural Land Evaluation and Site Assessment (LESA) system being developed by the Soil Conservation Service and the U.S. Department of Agriculture. The program will assist planners in identifying farmland that should be protected based on land capability, soil productivity, soil potentials, and important farmland rating.

RECOMMENDATIONS TO THE STATE

1. Promote agricultural production within Pennsylvania and in nearby states by:

    a. Offering incentives for farmers to diversify production, utilizing technical assistance from extension agents and low-interest state-guaranteed loans to make changes necessary for diversification.

    b. Mandating a study by our Department of Agriculture and Pennsylvania State University investigating the potential for producing various crops needed in the state.

    c. Establishing demonstration experiments to test crop, animal, and fish varieties suitable to our soil and climate as well as developing low-input sustainable farming techniques.

    d. Providing tax incentives for small-scale food producers, such as not taxing the first $10,000 of income from food produced for local consumption.

    e. Issuing state tax credits for home and farm production, processing, and storing of food.

    f. Encouraging new farmers through loans and incentives to enter into certain types of farming operations, those which would maintain the optimal balance of farm types in the state. (See Research Recommendations #1).

    g. Initiating a program like New England's Small Farm Management Assistance Program to provide practical farm management skills to small-scale commercial farmers on a one-to-one basis.[37]

    h. Organizing a farmer linkage program whereby experienced farmers bring prospective farmers into their operation easing the transfer of land ownership over time. In this way the new farmer would be more successful in avoiding costly farming mistakes while gaining the tenured operator's knowledge of the farm.

    i. Expanding programs such as the Livestock Products Marketing Program to encourage Pennsylvania farmers to produce these commodities and consumers to purchase them.[38]

    j. Establishing a statewide Agricultural Development Council which would seek to enhance the viability of farming throughout Pennsylvania in the same way that industrial development agencies seek to encourage industry to locate in-state. This kind of council would consist of representatives from all parts of the food industry.

2. Preserve remaining farmland in the state by:

   a. Publishing guidelines to help local governments protect agricultural land and enhance farming. These guidelines could include ways to prevent "leapfrog" or random development, which removes from production not only the land that has been developed, but which in the long run isolates adjacent farming areas and inhibits certain farming activities. The state could also delineate ways whereby municipalities could best protect farmland in urban fringe areas, and it could prepare guidelines for different kinds of farmland preservation strategies and techniques including agricultural zoning, transfer of development rights, purchase of development rights, community land trusts, performance zoning, and so forth. It could prepare procedures which would help local governments assess the different kinds of strategies that would be most appropriate and feasible for them, given the extent of farming in the area, development pressures, commitment of farming community to remain in agriculture, existing and potential land use, economic characteristics, natural features, and attitudes of local residents towards preserving farmland.

   b. Mapping all farmland that the state believes should be protected from development, identifying all Class I and II soils that are crucial to the agricultural capabilities of the state. The state of California has been engaged in mapping all of its farmland for the last few years in order to identify those areas that are important to the state for agricultural production.

   c. Instituting a farmland capital gains tax in ways which would discourage speculators from investing in farmland, and selling it for development.

   d. Creating a committee to inventory and monitor all state-owned farmland and assess its productive capability while working to ensure that this land remains in farming. We encourage the passage of S.B. 1283, which would provide for an advisory committee to manage state-owned farmland.

   e. Amending Act 442 in ways that will make it more appropriate to the farmland preservation strategies within local counties. Consider including a "right of first refusal" amendment in the Bill. The "right of first refusal" or preemption option is currently used in France, where owners of farmland within designated areas must by law notify a state-chartered nonprofit corporation of their intention to sell their land. The corporation has the right to buy the farmland within 30 days.

   f. Providing funds for the counties to make Act 43 a significant option for farmers. The state could consider using its revenues from a real estate transfer tax as well as from monies paid on penalties and back taxes from violations of Act 319. States could provide part of this money to counties on a matching basis which would encourage counties to share in the cost of a purchase of development rights program.

g. Amending Article 5, Section 107 of the Municipalities Planning Code so that the municipalities can regulate subdivisions even where it creates parcels of more than 10 acres for agricultural purposes.

h. Encouraging municipalities to work together through joint municipal planning by working together to enact and adopt joint municipal comprehensive plans and joint municipal zoning ordinances. This would be one way to achieve agricultural zoning on a more regional basis, which could anticipate many of the current challenges to its constitutionality.

i. Encouraging the passage of House Bill 2032, which would record agricultural land transfers on an annual basis.

j. Encouraging the passage of Senate Bill 151, which would promote the family farm by establishing a family farm security program to encourage loans for the purchase of farm real estate.

k. Reducing the capital gains tax for those farmers who sell farmland to young, beginning farmers, especially if farmland is sold at less than full market value. The state currently receives 2.2 percent of the gross.

l. Keeping a yearly record of how effective current farmland preservation legislation has been. This should include updated information on Acts 442, 43, 284, 515, 319, and 71. Periodic analysis should be conducted to explain why or why not the legislation is successful and whether or not amendments to the legislation are needed.

3. Stop or decrease the loss of our topsoil by:

   a. Enforcing existing anti-erosion laws by establishing new penalties for erosion damage. This would involve prohibiting all agricultural production activities which result in more than four tons of soil loss per acre per year (maximum soil regenerative capability in PA).

   b. Enforcing the soil erosion and sediment control law that requires a conservation plan for all agricultural lands in excess of 25 acres.

   c. Linking economic programs, such as loans, crop insurance, disaster relief, and state purchase of farm commodities, to the avoidance of excessive soil erosion.

   d. Instituting and enforcing a "severance tax" on soil losses due to excessive erosion to finance subsidies, to encourage conservation practices, and to pay for downstream dredging of silt, damage to water treatment facilities, and other social costs.

e. Establishing rewards for soil enrichment, such as tax credits for on-farm soil and water conservation programs, including contour tillage, minimum tillage, and crop rotation. Using public subsidies, such as low-interest loans, preferential farm property tax formulas and valuations, and other tax incentives to encourage cover and permanent cropping, minimum tillage, ridge planting, proper rotation, longer rotations, biological nitrogen fixation, contour plowing, terracing, stripcropping, leaving harvest residues on soil surfaces, reducing soil compaction and salinity, intercropping, and regional organic waste recycling.

f. Developing incentives for encouraging the use of rental arrangements which include provisions for sharing erosion control and soil enrichment costs with the landowner.

g. Developing public awareness programs to promote understanding of the need to support sound soil conservation practices.

4. Expand local markets by:

   a. Establishing more farmers' markets and organizing wholesale farmers' markets to supply retailers, consumer co-ops, and other volume purchasers.

   b. Increasing promotional efforts for direct purchase of food from farmers by supermarkets, restaurants, schools, hospitals, and other institutions.

   c. Encouraging existing processing plants to purchase locally-grown products.

   d. Developing linkages between large-volume food buyers and Pennsylvania producers, an example of which is outlined under Strategic Theme II "Pennsylvania should Encourage Local Markets."

   e. Giving preference to in-state producers in bidding for the sale of foods by permitting state institutions to purchase foodstuffs directly from local farmers and in-state producers at prices at or in excess of the lowest submitted bid according to a percentage to be determined by the state. This may require amending the Administrative Code of 1929, Section 240E. An example of this kind of policy is the state of Maine's 1979 law relating to state agency purchase of Maine's farms and fisheries products. Massachusetts is also considering such a law.

   f. Providing assistance to small growers through a statewide marketing clearinghouse.

g. Assessing the viability of implementing in Pennsylvania marketing alternatives to determine price and maintain market access for individual farmers through electronic commodity markets, vertical coordination through forward contracting, forward deliverable contract markets, and mandatory public reporting of market information. Other options include exclusive agency bargaining, vertical integration through ownership, joint ventures between agricultural cooperatives and agribusiness-marketing firms, marketing orders, and marketing boards.[39]

h. Establishing regional livestock marketing committees to evaluate alternatives such as regional market centers owned and operated by either a local or a regional cooperative, a regional electronic sales exchange, and contract sales to packers, while providing for more direct movement from producer to slaughterer thereby decreasing costs.[40]

5. Strengthen in-state food-processing capabilities by:

a. Providing incentives for existing food companies to develop more energy-efficient processing and packaging techniques, along with incentives to attract new food processors who wish to reduce transportation costs by locating near a major distribution center.

b. Helping to establish community food processing and storage facilities for the use of families and small commercial food producers. In this way, economies in equipment and energy consumption can be realized.

c. Providing incentives for on-farm processing, cooling, and fresh packing of local food crops.

d. Encouraging the passage of House Bill 1472 which follows the model law recommended by the Food and Drug Administration that over 40 states have now adopted. The law would bring the state food processing regulations into conformity with federal standards. This standardization would encourage more food processors to locate in Pennsylvania.

6. Effect a transition from depletable to renewable energy sources by conducting regional inventories of all renewable energy sources and providing incentives, such as tax credits or low-interest loans for investments made in agricultural energy conservation and on-site development of renewable energy sources, or tax exemptions for income received from the production of renewable energy.

7. Recycle organic wastes to utilize their full potential by:

a. Preparing a state-wide inventory of the types and amounts of organic wastes available now and in the future and assess the ability of these wastes to improve soil fertility and tilth and their potential energy use.

    b. Developing incentives for using local organic wastes for fertilizer and incentives to industry to separate toxic substances from their wastes so that they might be more safely used on cropland.

8. Enact a bill which requires returnable bottles and the recycling of metal cans. This would reduce materials consumption in the food system.

9. Protect the natural environment by enforcing existing environmental protection laws, developing programs for safer handling of toxic pesticides and stronger enforcement of laws against pesticide misuse, and developing stricter standards for pesticide residues in foods. Collect data on pesticide use in Pennsylvania.

10. Develop long-range food system plans by:

    a. Revising and improving the methods by which crops and livestock production data are gathered so that the future direction of the state's agriculture situation is determined based on accurate, reliable information.

    b. Creating an overall state food policy which will increase regional self-reliance and economic viability while decreasing the vulnerability of the state's food supply.

    c. Planning for an emergency food supply disruption by strengthening our grain storage facilities capacity.

    d. Conducting an annual study of the condition of the state food system to find out the amount of food currently being imported and exported, soil erosion losses, amount of land lost to development, and other food system issues while stating what Pennsylvania can do to increase its self-reliance.

11. Instill a greater understanding of agriculture's role in all Commonwealth citizens by:

    a. Increasing awareness of seasonal, locally-grown produce, and its nutritional and economic benefits.

    b. Initiating educational programs on farmland preservation, farm energy conservation, reduced pesticide and fertilizer use, recycling of organic wastes, and energy expenditures in different methods of farming and home food production and preparation.

    c. Expanding the AGRI-LEARN program of York County elementary schools to other counties. This is a curriculum enrichment program which brings American agriculture into the classroom.[41]

    d. Promoting nutrition education campaigns illustrating the relationships between diet and health and the benefits of fresh, locally-grown, and minimally processed foods, as well as bulk purchasing of food.

e. Communicating goals and the condition of our food supply as revealed in the state's annual study.

RECOMMENDATIONS TO THE FOOD INDUSTRY

1. Encourage sustainable farming methods by using the food industry's influence on farm production techniques to decrease the use of dangerous pesticides and increase the use of soil conservation measures. De-emphasize produce appearance while concentrating on freshness and nutritional quality.

2. Minimize energy and material use by using less processing (and/or more efficient methods), simpler packaging, and rail networks more often in transporting commodities.

3. Move towards regionalizing food purchasing, processing, and distribution, thereby decreasing transport costs and strengthening the local economy with increased use of local labor.

4. Promote the consumption of fresh, locally-produced food in season, enhancing consumer nutrition and building a stronger local economy.

5. Provide nutrition education, hints for food preparation, and techniques on preserving fruits and vegetables.

6. Focus on food in a holistic way, recognizing that diet is an essential component of a healthy life and is influential in preventing as well as treating illness.

7. Grocery stores should purchase and label for consumers Pennsylvania produce (as Weis markets do). Point-of-purchase literature could be made available to consumers to make them aware of where food originates and the issues involved with this.

RECOMMENDATIONS TO THE AGRICULTURAL RESEARCH COMMUNITY[42]

1. Determine the optimal mix of farm types in Pennsylvania to obtain sustainable yields of both crops and livestock to meet the state's consumption needs and to provide a sufficient level of exports. Determine the production needed to support processing plants for various commodities. If the commodity is produced in quantities sufficient to make a processing plant economically competitive, this would be an incentive for establishing those businesses in state. For example, the Department of Agricultural Economics at Penn State has developed a model which indicated that in many cases "too few broilers are produced in a region to justify the maintenance of a broiler processing plant."[43]

2. Assess relationships between biofuels development (including forest resources) and long term soil productivity to provide guidelines for future programs.[44]

3. Investigate how to improve the capability of using forage and Pennsylvania crop wastes.[45]

4. Continue and expand the small-scale-agriculture research program at Penn State. This will not only aid small-scale enterprises, but will also help large-scale farms diversify and become less dependent upon a single commodity. Efforts along this line will help meet local food needs and keep Pennsylvania farmland in production.[46]

   a. There is a need for smaller equipment which would use less energy and decrease the amount of soil compaction and erosion, at a cost that small operators can afford.

   b. Continue and expand research on fruits and vegetables and post-harvest handling methods to benefit small-scale producers.

   c. Continue livestock management and forage research programs aimed at smaller enterprises.

   d. Continue to develop beef feeding systems based on forages rather than high-energy grains.

5. Work to develop plants which resist pests and mature earlier so less drying is required.[47]

6. Investigate Pennsylvania's soil erosion problems, looking at crop residues, run-off, tillage practices, rotation systems, terraces, equipment use, etc.[48]

7. Investigate perennial agricultural systems (permaculture) appropriate to Pennsylvania to eliminate annual soil disturbance and decrease energy, fertilizer, pesticide, and herbicide usage.

8. Determine the long-term effects of recommended applications of chemical fertilizers, pesticides, and herbicides on the

productivity of selected Pennsylvania soils.

9. Update the Stanford Research Institute's inventory of the organic wastes in Pennsylvania which are available to improve soil fertility and tilth.

10. Investigate methods to utilize Pennsylvania municipal wastes in agriculture.

11. Expand research on biological nitrogen fixation.

12. Develop crop varieties adaptable to low-input farming systems in Pennsylvania.

13. Explore the potential of small-scale aquaculture in Pennsylvania to provide high-quality protein using cost-efficient and ecologically sound methods.

14. Set up plots to study the transition phase of switching from conventional to low-input farming systems.

15. Examine methods for producing food in cities, e.g. rooftop food production systems. Seek ways to make urban food distribution and marketing systems more accessible to local and regional food producers.

16. Develop more energy-efficient food processing, storing, and distribution techniques.

SUMMARY OF RECOMMENDATIONS

The preceding lists of recommendations are not easy reading. Some of the recommendations may seem hard to implement. Regeneration is never an easy process. But consider how much harder it will be to pick up the pieces should Pennsylvania's food system collapse.

Our recommendations should be viewed as a flexible agenda rather than a rigid program. They are based on what we know today. Tomorrow, as we learn more, we can revise our assessments of the problems and our options. We hope that part of our learning process will come from you in the form of feedback on what you've read in this report.

It is vital that we all realize we have the option to change our food system, and that we can exercise that option now. The time to begin planning for regeneration is today.

WHAT HAS BEEN DONE: AN ANALYSIS OF PENNSYLVANIA'S LAWS RELATING TO THE FOOD SECTOR

This section was written primarily for those readers who want an assessment of how effective our legislation has been in preserving farmland and helping the farmer, and for those who want an overview of some of the laws and programs the state has recently enacted or proposed to encourage agriculture and to meet in-state food needs. Some of the language and terms are of necessity technical. Because of its specialized nature and content we placed this section at the end of the report. We hope that those who are interested in the subject will benefit from its inclusion. Those who are less inclined towards reviewing legislation can simply omit the section.

Like many states confronting the erosion and loss of their agricultural resources, Pennsylvania has begun to take action. Slowly beginning in the late sixties, and finally accelerating during the current administration are the enactments of a series of laws and programs aimed at making the state's food system more sustainable. This legislation covers a wide range of objectives: decreasing soil erosion, retaining farmland, encouraging family farming, expanding the food industry, promoting Pennsylvania foodstuffs, and enhancing the economic viability of agricultural production. The current administration has publicly committed itself to highlighting agriculture as a "priority for the 1980's." These efforts are to be applauded. The following analysis is not intended to denigrate them but rather to suggest ways they can be improved.

RETAINING FARMLAND AND FARMERS: HOW WELL ARE WE DOING?

Since the late sixties, the Commonwealth has enacted a variety of laws targeted at preserving its agricultural resources and helping farmers prevail against the impacts of development pressure. Such legislation deals with increasing land values, which raise property taxes and the cost of agricultural land for farming purposes; conflicts between farm owners and surrounding residential areas; local government interference with farming activities; government condemnation for highways, reservoirs, and other public projects; and extension of public sewer and water services into farming areas. These laws have also sought to encourage farmers to keep farming rather than to "cash in" on the high value of their land. The following analyses of the strengths and weaknesses of Act 442, Act 43, Act 284, Act 515, and Act 319 show how these different laws were intended to address these problems, and how effective they have been.

While good intentions were unquestionably behind these laws, what begins to emerge is a legislative panorama whose features are not integrated with each other to achieve maximum impact. It is as if the legislators knew they needed certain elements but never anticipated how to design them in an effective way. Rather than any comprehensive state policy, farmland and farmer preservation has up to now been too much of a fragmented undertaking. In some cases the incentives that would give strength to certain laws are absent because they have already been applied elsewhere. Another major problem is the lack of funding commitment by the Commonwealth to help the legislation achieve its promise.

ACT 442

Its Intent

Signed into law in 1968, Act 442 sought to clarify and broaden the way by which the Commonwealth, counties, and their authorities could preserve open space. By definition, open space included farmland as well as water resources, forests, nature reserves, and so forth. The state or counties could acquire land in "fee-simple" (payment for full property rights) or through partial interest acquisition (through easements, deed restrictions, development rights). The significance of the Act lies in the process through which this full acquisition or less-than-full property rights acquisition can take place. First, the state or counties have to prepare a resource, recreation, or land use plan showing why the particular property or properties to be acquired would fulfill the open space objectives. Then they must gain the approval of their respective planning board, commission, and commissioners, and assess through public hearings the willingness of landowners to sell them full or partial interest in their land. Any full property rights which are acquired have to be offered for resale two years after the date of purchase. When the land is resold, restrictive covenants must be attached to the deed, limiting the future use of the property to that use specified in the plan.

Its Strengths

On paper Act 442 holds a lot of promise.

1. Though not an agricultural lands protection bill per se, one of Act 442's stated purposes is "to protect and conserve farmland."

2. The plan requirement means that farmland retention will not be a fragmented undertaking, but will have a rational, explicit policy behind it.

(Key farming areas may become part of agricultural preserves. Those areas most vulnerable to development could receive highest priority, or those areas evaluated as most sustainable could be targeted for this program.)

3. The acquisition effort is intended to be permanent. Farmland acquired in fee simple must be resold with restrictive covenants which remain with the deed indefinitely. Only if after a period of time the county or state decides the restriction is no longer warranted -- given changes to the surrounding areas -- can the restriction be removed.

4. The farm community is given incentives for not selling its land for conflicting uses such as development. In the short run, there is outright compensation either for the entire property or an easement. In the long run, the restrictions could lead to lowered property taxes. Land protected within a specified preserve area would less likely be subjected to interferences with common farming practices.

5. The role of the county in protecting environmentally sensitive natural areas, in guiding change, and in supporting local industry is enhanced by Act 442. In a state where major land use decisions such as zoning are made at the municipal level, Act 442 enables the county and the Commonwealth to take a comprehensive initiative to protect farmland.

6. Government bodies are not to become permanent owners of farmland under Act 442. Within a specified time all land purchased in fee simple must be returned to the private market with restrictions on its future use.

Its Weaknesses

In reality Act 442 has borne little fruit. Fourteen years after enactment the law has never retained a single farm and has not kept agricultural land from going out of production or from being sold for conflicting uses. Its only open space application was in the late sixties when the Bucks County Neshaminy Creek Water Resources Authority (NCWRA) acted under Act 442 to buy flood plain property for its intergrated water supply, flood control, water quality, conservation, and recreation program.

Why has the act been so unproductive?

1. The most apparent reason is the lack of funding commitment by the Commonwealth, the counties, and their authorities. Without appropriate financing, any steps taken are accomplishing little more than marking time. The purpose of the act is to acquire and resell land with permanent restrictive agreements and that requires some level of funding.

2. Though lack of funding is the most obvious reason, there are certain ambiguities and weaknesses within the law itself which may have deterred some counties from using it. Since June 1981, Lancaster County has sought amendments to Act 442 through H.B. 1499 in order to make the act more appropriate to its comprehensive farmland preservation strategy and its deed restriction program. Right now the outlook is bleak on passage of the amendments. Lancaster County is beginning to consider other approaches which may well side-step Act 442.[1]

3. One inherent weakness of the act is that it permits any landowner with property in an area targeted for preservation to request that his land be purchased in its entirety, in fee simple. There may well be some farms within an agricultural preserve area which are less vital to county interests than other farms. To require the county to pay in full for any farm in a preserve area -- should the owner request it -- could sap the financial resources of the county and not necessarily further the goal of farmland retention. As originally recommended by Lancaster County, "it should be possible for the county to designate agricultural preserves without obligating the County to

take any particular action on any particular parcel."[2] H.B. No. 1499 proposes that the Commonwealth or the counties "may acquire the fee simple."

4. Although Act 442 stipulates that land purchased in fee simple must be offered for resale two years after the date of purchase there is no assurance that the land will be sold. Because of the restrictive agreements, the county may find that bidding is unacceptably low. Two years after purchasing property under Act 442, the Neshaminy Creek Water Resources Authority offered it for sale. Bids were so low that the land was withdrawn from public sale and it took 12 to 13 years before it was put back on the market again. Only in 1982 is settlement finally being made.[3] Although counties can lease such land until final sale, it may be hard in some cases for them to quickly recoup part of their outlay.

5. In spite of its requirement that selective areas be designated through a land use or resource plan, Act 442 offers no assurance that farm properties within those areas will be retained in farming unless restrictive agreements are placed on them. If a farm owner wants to sell his farm, there is no stipulation that he or she need first notify the government of this intent. This first notification process -- known as the "right of first refusal" -- would give the state or county the opportunity to purchase or refuse to purchase the property for agricultural use. Originally framed into a separate bill, H.B. 1983, in November, 1979, the concept of giving the government the right of first refusal now lies dormant. The bill itself died from neglect during the last session.

6. One ambiguous aspect of Act 442 is whether there would be a further reduction in property taxes for a farm owner who already participates in a current use assessment program, either under Act 515 or Act 319. This question also needs to be answered for all restrictive agreements, including easements

and purchase of development rights.

In summary, Act 442 was well intentioned but has not done a thing to preserve Pennsylvania's farmland. As it presently stands, it is useless. It needs to be amended to make it a worthwhile tool for preserving Pennsylvania's most vital resource.[4]

ACT 43

Its Intent

The passage of Act 43, the "Agricultural Area Security Law," in 1981, finally gave to Pennsylvania farmers the same opportunities to create exclusive farming areas which had been available to their counterparts in Maryland since 1979 and in New York since 1971. Incorporating different aspects of the two neighboring "district" laws, Act 43 enables one or more farm owners to create an agricultural area of no less than 500 mostly contiguous acres, within which the farmer will be secure from basic infringements on farming activities. For a minimum of 7 years, farmers in agricultural areas can be assured of limitations on nuisance ordinances and the exercise of eminent domain (condemnation). They are also eligible for financial benefits if the county they are in adopts a purchase of development rights program.

Its Strengths

Given the recent enactment of Act 43, it is too soon to evaluate how well the law is working. The "Rules and Regulations" for applying the law appeared January 30, 1982. It is possible to look at those benefits Act 43 seems to offer as well as its apparent vulnerabilities.

1. From the point of view of the farm community, Act 43 is important in that it encourages farm owners to voluntarily agree to form farming areas. The farmer is the initiator, rather than any government entity.

2. This voluntary initiative gives farmers a psychological benefit of control and the creation of farming areas gives the community or county the benefit that farming will be retained for a specified number of years. This in

turn could have rippling effects on the agricultural service sector and local businesses.

3. From the point of view of local government, the administration and control over the district are locally based. Approval of an area rests with town, township, city, or borough.

4. There are limitations on local regulations and on government condemnation for those in agricultural areas.

5. The farm owner does not lose his property rights but only temporarily relinquishes the right to sell the land for conflicting uses. After the 7 years have terminated, the owner may withdraw from the area.

6. The law enhances the county's authority to adopt a purchase of development rights program for farm owners in agricultural areas.

Its Weaknesses

1. Except for the psychological benefits, Act 43 offers farmers little more than what they already have in the way of monetary incentives. Unlike New York, where current use assessment -- assessing land at its use or agricultural value -- is only given to farmers who join a district, Pennsylvania has given all its farmers state and county current use assessment laws, Acts 319 and 515, as an option. Should there be enactment of H.B. No. 1823, the "right to farm" bill which "protects agricultural operations from nuisance suits and ordinances under certain circumstances," one of the strengths of Act 43 could be dissipated. Farmers would not have to join an area in order to receive protection from local nuisance ordinances. On the other hand, the "right to farm" law would make protection from nuisance suits and ordinances available to those farmers in developing communities who may be unable to form a district.

2. Agricultural areas cannot be relied on as a permanent way to retain farmland. Seven-year renewal periods presume a situation of impermanence.

3. The option of permanence through a purchase of development rights program is only meaningful if a county chooses to adopt one. However, there are no state funding sources targeted for county use. The act simply says that a county may use "moneys from its general fund and/or incur debt to make available moneys to purchase the development easements in agricultural areas" (Section 14). The prototype agricultural areas program in Maryland promotes the linkage between farming areas and purchasing development rights through an interplay of funding sources: a statewide real estate transfer tax, an agricultural transfer tax, and distribution of grants to counties with districts or areas.

The Commonwealth needs to investigate funding sources so that counties can realistically begin purchase of development rights programs. One avenue to explore is setting aside a proportion of its revenues from its real estate transfer tax. There is a 2% tax on all real estate transfers in the state, with half going to the state and half going to municipalities which share their returns with the local school district. In 1979, the state collected $92.7 million and in 1980, $75.8 million from the tax.[5]

Although the amounts may be low, considering the millions of dollars potentially needed to purchase development rights, setting aside that tax income would demonstrate that the state was in earnest about its agricultural lands preservation policy. Furthermore, if this money were given to counties on a matching basis, it would encourage counties to initiate their own revenue-raising programs and thus share in the cost.

4. Even with a county-funded purchase of development rights program, there is nothing to prevent a hole in the doughnut situation from occurring. A

farm owner in the center of an area may decide to withdraw from that area and/or reject an offer for his development rights. If his neighbors agree to remain in farming and he sells out for a conflicting use, the entire area may become jeopardized. To avoid this, a "right to first refusal" could be added to Act 43, or the counties could require that all development rights in each area be kept in escrow until each farm owner in an area has agreed to sell his development rights.

In summary, Act 43 holds promise if for no other reason than it shows a commitment by the farming community to protect and enhance its farming operations. Without financial backing, however, for an integrated purchase of development rights program, the law is very weak and cannot permanently preserve agricultural lands and farms in Pennsylvania.[6]

ACT 284

AGRICULTURAL ZONING

Its Intent

Agricultural zoning is intended to promote the continuation of agriculture in areas best suited to the characteristics and needs of farming. Those land uses which are incompatible with agriculture or which create conflicts with farming are either excluded or severely restricted within agricultural zones. The power to zone in Pennsylvania is historically derived from the police power of the state. Local governments have had zoning authority since the 1920s through enabling legislation recorded in local codes. In 1968, this enabling legislation was codified statewide into the Pennsylvania Municipalities Planning Code, Act 247. In 1978, this zoning authority was enhanced through the passage of an amendment to the code, Act 284. Zoning now can legitimately be applied to preserving "prime agriculture and farmland considering topography, soil type and classification, and present use" (Section 604.3).

Its Strengths

Called by a host of different names -- Farm Residential, Agricultural Residential, Agricultural Protection, Agricultural Industry -- agricultural zoning has been applied by a number of townships in Pennsylvania. Since the passage of Act 284, 55 townships and 4 boroughs (all in southeastern Pennsylvania) have implemented agricultural zoning ordinances under the new provisions.[7] In some counties such as York and Lancaster, agricultural zoning has been a primary approach by which to preserve farmland and encourage the continuation of family farming.

How strong has agricultural zoning been? Some would argue, only as strong as the absence of challenges to its validity. Others would say that in principle zoning has much to offer.

1. Agricultural zoning segregates incompatible uses from farming areas. It reduces interferences with farming and the need for local ordinances limiting agricultural activities.

2. It recognizes farming as an economic activity rather than as a gentleman's pastime or as simply open space. In the case of agricultural industry zoning, it may help to revitalize neighboring areas experiencing a loss of farm-related businesses.

3. It restricts development on prime agricultural soils and reduces or halts the use of prime farmland for residential development.

4. At the same time it usually permits the farm owner some kind of development. This could take the form of a "fixed scale" which irrespective of farm size "fixes" the number of lots a farm owner can sell off for development, or a "sliding scale" which correlates the amount of subdivision for residential use with farm size. The larger the farm, the more lots the owner can sell.[8] It could also provide for clustering, in which residential units are "clustered" or grouped together in ways and ratios which give the farmer opportunities for development, but which retain most of the integrity of the farming operation by keeping open most of the farming area.

5. By controlling development, agricultural zoning can help stabilize agricultural land values, by enabling farmers to purchase farmland at prices they can afford, and by keeping property taxes down.

Its Weaknesses

In reality, agricultural zoning in Pennsylvania has had a tough row to hoe. It has been a particularly difficult method for suburban and semi-rural municipalities in the state where over the years agricultural zoning has been challenged on a variety of charges.

1. Zoning ordinances not comprehensive enough to include a breadth of housing types and densities have frequently been invalidated on the grounds of being exclusionary, such as happened in the 1980 Chester County case of Wetherill v. West Nantmeal Township, 406 A2d 827. The courts have scrutinized agricultural zoning regulations to ensure that townships are meeting their responsibility of the "fair share" demands for regional housing in other parts of the municipality. Unfortunately for some townships, trying to meet the "fair share" demands has been too much of a guessing game given the ambiguity of the "fair share" concept.

2. The court decided in the 1970 case, Concord Township Appeal, 439 Pa. 466, 268 A2d 765, that without an extraordinary justification, "large-lot" zoning (between two to three acres) was unreasonable and constituted a taking without just compensation. In the 1980 case of Martin v. Township of Millcreek in Lebanon County, 413 A2d 764, a 10-acre minimum lot size regulation was declared "confiscatory."[9] Only in extremely rural areas where farmland values remain more a function of agricultural use than development potential is agricultural zoning likely to be upheld on the grounds that it is not a "taking without just compensation." These are the areas where zoning is least likely to be challenged.

3. As one way to address the "taking" issue by compensating farm owners in an agricultural zone for restricting development, some townships have initiated transfer of development rights ordinances. This option is a way for farm owners in a zone who are prohibited or severely restricted from developing their land to transfer their development rights to landowners in a zone where development is encouraged. This type of transfer does not involve public

expenditures (as do purchase of development rights programs). Instead it is conducted on the private market between owners of land in the agricultural and development zones. Theoretically, the idea has much merit. In practice, its success rate has been very low. In Buckingham Township, Bucks County, since 1975 there has only been one transfer of development rights, and that between the same owner holding land in both zones.[10] One crucial problem is that in some townships agricultural enough to adopt agricultural zoning, there may be little demand for the kind of development that would generate the funds needed to pay for the development rights. In Buckingham Township there was little demand for development because the municipality did not put in public sewer facilities in the development zone.

4. Some believe that Act 284 will add weight to the claim that zoning for agricultural use is as legitimate as zoning for residential, commercial, or industrial land uses. Although agricultural zoning ordinances may now withstand the challenge of being "arbitrary" since one can demonstrate the delineation of agricultural zones on the basis of appropriate, natural resources, it may be hard for a township to justify why one farm on Class II soils is in an agricultural zone whereas another is not.

5. It is possible to circumvent the intent of agricultural zoning through limits placed on regulating subdivision in the Municipalities Planning Code. Although Article V of the Code authorizes municipalities to regulate "subdivisions" and "land development," they cannot regulate subdivision where it creates parcels of "more than 10 acres" for "agricultural purposes" (Section 107.21). In the recent case in York County, Hopewell Township Board of Supervisors v. Golla, 428 A2d 701 1981, the Commonwealth Court invalidated the township agricultural zoning regulations in spite of its "worthy purpose" because its method prevented the farm owners from subdividing their 140-acre

farm into 7-14 "farmettes." The acreage of each farmette would have exceeded the 10-acre minimum. The township argued that farm size smaller than 50 acres would decrease agricultural productivity and efficiency. The landowners nevertheless claimed that their proposed farmettes could qualify for agricultural use. Since these farmettes were to be greater than 10 acres, the court found that until the legislature amends the Code to revise this regulation on subdivisions, the township zoning ordinance is invalid.[11]

6. Even in the absence of court challenges (an unlikely situation), agricultural zoning is not a permanent process for retaining farmland and encouraging the continuation of farming. Over time municipal governments may decide that their zoning should be revised or even abandoned. Changes in land use surrounding the agricultural zones may require a reevaluation of their validity.

7. Agricultural zoning on a municipal basis is a very limited approach protecting and encouraging farming. Two neighboring agricultural townships may have two different sets of ordinances, one that is permissive and one restrictive. A third may have none at all and even encourage development which conflicts with farming in an adjacent township's agricultural zone. Some form of regional zoning which delineates agricultural zones on a regional basis could overcome the handicaps of this disjointed township by township process. For those townships which are primarily agricultural and not within proximity to a metropolitan area, it makes little sense that they must provide for every kind of housing density as well as industrial and commercial need. Urban communities are not required to raze apartments in order to create farmland to meet food needs, even though our prime farmland is disappearing and as population grows, our food needs are increasing.

8. One approach to agricultural zoning which could address the food need

issue on a more regional basis and which could avoid many challenges to its constitutionality is through joint municipal planning. With the amendment, Article XI-A, to the Municipalities Planning Code, Senate Bill 1008, and the Intergovernmental Cooperation Act, municipalities have authorization to work together to enact and adopt joint municipal comprehensive plans and joint municipal zoning ordinances.[12] Agricultural zoning could be undertaken under this kind of ordinance in a way which would ensure that the "fair share" needs of the municipalities are being met -- thus obviating the charge of exclusion. It could give agricultural zoning greater legitimacy since townships with primary farming areas would be the ones to have agricultural zones -- thus withstanding the claim of arbitrariness. It would also provide a market for techniques such as transfer of development rights since some municipalities will have commercial/industrial areas -- thus preventing the charge that zoning is confiscatory.

In summary, agricultural zoning in suburban and semi-rural municipalities seems fated to receive a battery of challenges to its constitutional validity. It may be very difficult for individual municipalities in urban fringe areas to withstand the assault. Because current enabling legislation precludes county and state-wide zoning, municipalities that want to undertake agricultural zoning could consider the merits of joint municipal planning.[13]

ACT 515 AND ACT 319

Their Intent

Acts 515 and 319 are current use assessment laws in Pennsylvania which enable owners of eligible land to receive a tax assessment based on current use if they agree to maintain that use. Farm owners under either act would be assessed on the basis of the agricultural value of their land, rather than the fair market value (development value). Act 515 was passed in 1965 to allow "certain counties of the Commonwealth to covenant with land owners for the preservation of land in farm, forest, water supply or open space uses." Act 319, the Clean and Green Act, was passed in 1975 to provide lowered assessment on agricultural and forest reserve land. Whereas Act 515 requires individual county enactment, Act 319 is statewide and available to eligible landowners throughout the state.

Covenant lengths vary between the two acts. Under Act 515 the agreement is 10 years and is automatically renewed each year. Under Act 319 the length is indefinite, but the covenant can be broken with a 30-day notice. A farm owner is eligible under Act 515 if he has at least 10 acres with no minimum farm income. To be eligible under Act 319 an owner must have at least 10 acres or a minimum farm income of $2,000 a year. Rather than offering carte blanche current use assessment, both acts penalize farm owners who break their covenants, requiring back taxes up to a prescribed number of years as well as a 5% compounded interest under Act 515 and a 6% interest under Act 319.

The intent of both acts is to aid the preservation of farmland by offering farm owners a break on their property taxes in exchange for an agreement that they will not subdivide their land at all (under Act 515) or that they will only convert two acres each year for residential, agricultural, or forest use, as long as the conversion does not exceed 10% of the land or 10 acres (under Act 319). To make it possible for a farmer to sell an entire farm and for children to inherit the farm without breaching an Act 319 covenant, the legislature amended Act 319. Under this amendment, Act 15, a farm owner who simply separates his land -- divides it into two or more tracts without changing the use -- would still receive use assessment and not be penalized.[14]

Their Strengths

Nearly all the states have some form of current use assessment, though not all have the additional taxation sanction ("deferred taxation"), or covenants ("restrictive agreements"), which Acts 515 and 319 contain.

1. The tax benefits of each act need to be seen in relationship to the market value of farmland and in comparison with the current assessed values of the land. In counties and municipalities where both of these are high, Acts 515 and 319 could markedly help to lessen the property tax burden. This is particularly true in urban fringe areas where the market value is significantly higher than the agricultural value. A recent summary of participation in Act 319 during 1981 reported there was an average 58 percent reduction in the amount of property taxes paid by participating farmers in 21 counties across the state.[15]

2. Farmland held under both acts will not be converted to a non-farming use within a given period of time (under Act 515) or indefinitely (under Act 319) without a penalty, which temporarily keeps some of the state's farmland under production. As of 1977, 8,892 landowners with 441,587 acres were enrolled in Act 515. Of the counties (all southeastern) under the Act, one had 61%, two, 77% and one, 81% of their county farm acreage under agreement. As of

1981, there were 18,022 landowners with 543,707 acres covering 32 counties participating in Act 319.[16]

Their Weaknesses

Evaluating the success of Act 515 and Act 319 depends on the perspective of the evaluator. From the point of view of those farmers who receive reductions in their assessment as a result of these laws, they can be regarded as a success. From the vantage point of policymakers who not only want to reduce the carrying costs of farmers but who also want to preserve farmland, the long-term benefits are questionable.

1. Tax relief for farm owners through Acts 515 and 319 does not necessarily mean that farmland preservation will be achieved. One major reason is that farmers still have more to gain economically from selling their farms than from receiving a tax reduction, or from having to pay back taxes for a certain number of years and a penalty which is far below market interest rates. High property taxes are not the only expenditure in the increasingly higher costs of farming. The total bill, even with a reduction in taxes, may reach intolerable proportions, forcing the farmer to sell. Retirement-aged farmers without children to carry on may need to cash in on the only investment they have, their land. For a host of reasons, it may become more advantageous to sell to the highest bidder, usually the developer. In this context the reduction in taxes and the restrictions in the form of penalties are negligible. Although temporarily relieving a specific fiscal burden, Acts 515 and 319 are no assurance that in the long run farmland will be kept in agricultural use. Many studies have indicated that current use or preferential assessment (as some refer to it) has only limited value in preserving farmland

or open space resources, unless it is coupled with other farmland preservation strategies.[17]

2. The method by which property taxes are assessed could have a decisive impact on how much tax relief Acts 515 and 319 offer. If a comparable sales method is used which looks at development values, farm owners in areas where market values are high will receive notable reductions. However, their counterparts in less pressured locations will receive far less of a reduction. In fact, it is possible that if land is underassessed before the adoption of Act 515 or Act 319, farmers would do better to pay their present assessed values rather than apply for special assessment. The low statewide level of participation in current use assessment programs is attributed in part to the de facto low assessment in some counties.[18] To be more equitable and uniform in giving tax relief to farmers, some counties use an appraisal system based on soil types and productivity. Sometimes this approach ignores such factors as orientation of the land and rainfall and can misrepresent the actual level of productivity on a specific site.

3. Another difficulty with this kind of property tax relief which preferentially helps one group of taxpayers is that it shifts the tax burden onto other taxpayers. If farmers pay less taxes and local government budgets remain constant or even increase -- given the "New Federalism" -- then someone else must pay for the services in the local community. The extent to which the tax burden shifts depends upon how much farmland is in the area and its prior contribution in financing local services. It also depends upon the amount of nonfarm property over which the loss in taxes can be spread. The results of a 1977 study of Act 319 showed that taxes increased for non-participating owners up "to $3.35 per acre for non-participating land and up to $133 for a house and a lot with a market value of $40,000."[19]

4. One unanticipated result of shifting the tax burden in areas where there is a lot of participating land in farms is that tax millage will have to increase if jurisdictions want to maintain the same level of revenues. For example, in one community where the participation in current use assessment meant a 32% loss of the total assessed value, there was a resultant increase of 9.74 mills in the tax base. Those farmers faced with increased millage while benefiting from current use assessment may find a substantial erosion of their tax savings.[20]

5. Some counties have found that Act 515, which has a broader basis for eligibility than Act 319, is primarily benefiting speculators. In Bucks County in southeastern Pennsylvania assessment records show "that a significant number of owners of preferentially assessed lands are land investment companies, realty firms, out-of-county owners, developers, and other possible speculators."[21] In Bucks County most of the applications in recent years under Act 515 have concerned 10-acre homesites. Although some may argue that these do preserve limited amounts of open space, and are areas where family gardening can take place, they are not helping to preserve farmland, nor are they a way to provide tax incentives to families who want to grow their own garden but who have one acre or less of land.

6. Another difficulty with Act 515 as noted by Bucks County is in its administration. Having lost a court case in which the subdivision of land under Act 515 was not considered a breach of covenant, the Board of Assessment Appeals believes it has no "solid administrative guidelines" upon which to defend its decisions. Furthermore, monitoring all of the potentially permitted subdivisions under Act 515 could turn into an administrative nightmare. Bucks County is in the process of considering the repeal of Act 515 and recommending that participants switch to Act 319.[22]

In summary, in the short run Acts 515 and 319 have helped farmers decrease their property taxes. In the long run, however, there is no assurance that current use assessment alone can retain our farmland. From a land use perspective, these laws are but a holding action. How long they will "hold" our farmland remains to be seen.

OVERVIEW OF RECENT LAWS: 1976 - 1982

The recent enactment and introduction of the laws and programs summarized here show that the Commonwealth is seeking to enhance the viability of its agricultural base. Although most of the laws are addressing the specific needs of the farming community, there are a few which speak directly to the consumer and food industry. Whether or not regeneration is occuring as a result of these laws is hard to determine in some cases because they are so new. For that reason the following measures are merely described. The state needs to conduct periodic in-depth evaluations of their effectiveness. It is also important not to fall into the trap of thinking that once a law is passed the problem being addressed is cleared up, and that legislation is the only way to solve our food system problems.

Agriculture Logo Program

One of the most successful non-legislative programs of the current administration is its Agriculture Logo Program. This program is directed at three areas: farmland preservation -- by increasing demand and markets for farm products; economic development -- by increasing demand for local food products; and energy conservation -- by purchasing food products through local sources and reducing the need for long distance transportation. The logo "Pennsylvania Agriculture...We're Growing Better" has become widely displayed and used by more than 160 firms for their promotion. In addition, point-of-sale material has been distributed to 3,000 farm and retail markets. Marketing guides help orient consumers to local farm and direct market sources. Brochures and calendars highlighting locally grown food in season are also very positive steps to make consumers more aware of the agricultural bounty in Pennsylvania.

FARMERS/FARMLAND PRESERVATION

Act 179

Act 179 exempts family farm corporations -- those that have at least 75 percent of their assets devoted to agriculture -- from paying capital stock tax. This is a 1 percent tax on the gross assets. The act not only benefits present family farm corporations but provides an incentive for those farmers with enough income to incorporate.

Act 207

Of significant benefit to all farmers is the 1980 amendment to the Inheritance and Estate Tax Act of 1961. Land devoted to agricultural use for three years preceding the death of the owner, and which has generated a minimum yearly gross income of $2,000, can be taxed on the basis of its agricultural value rather than its development or fair market value. This amendment is particularly important to those farmers in semi-rural, metropolitan fringe areas where the price of agricultural land far exceeds its value for farming purposes. Too often farm families have had to sell off either the entire farm or large tracts of land in order to pay the inheritance tax.

Act 104

To ensure that milk producers and cooperatives receive prompt payment from dealers and handlers and to protect them against the loss of milk payment because of purchaser default, the legislature recently enacted Act 104, the

Milk Producers and Cooperative Security Funds Act. Through it both a milk producers security fund and a cooperative security fund are established to provide a procedure to process claims.

Act 110

The Cooperative Agricultural Association Act amends an earlier act providing for the incorporation and regulation of cooperative agricultural associations. An association with annual gross sales of $100,000 or less may perform an annual audit by an audit committee of three or more members of the association appointed by the board. These members need not be certified public accountants.

Act 71

Act 71 exempts farmers from paying assessments for sewer and water lines which front or cross their land, as long as they do not use the service. This act benefits those farmers who already have their own on-site water and sewer sources. Although the record indicates that only 72 farm owners have signed up for it since its passage in 1976,[23] it is believed that this number does not actually reflect the many farmers who have been helped by it. Municipalities or authorities who install the lines may not have gone to the trouble to file a notice of record with the county recorder of deeds for the particular exemption. There may also have been a decline in the amount of sewer and water service extensions into farming areas since 1976, due to escalating costs and a recent drop in housing construction.

Senate Bill 151

Of special benefit to young farmers is the proposed Senate Bill No. 151, the Family Farm Security Program, to encourage loans for the purchase of family farm real estate. Through a family loan guarantee the Commonwealth would pay a lender 90 percent of the sums due. With a maximum term of 20 years the loan would be amortized over its term with equal annual payments of principal and interest. During the first ten years of the loan, the Department of Agriculture would annually pay the lender 4 percent of the outstanding balance due at the beginning of that year, while the applicant would make payments according to the stated interest rate. This proposed bill is particularly important both for those farmers who have less than $50,000 to start farming and for those farmers who want to expand their present farm operations. Although passage during this session is unlikely, given lack of funding, this type of legislation is an important way to offset the higher cost of farmland, especially for the beginning farmer.

House Bill 1823

Popularly known as the "right to farm" law, this bill would place limitations on local ordinances and public nuisance actions against normal agricultural operations, if the operations had lawfully existed one year or more prior to the date of bringing such action. Municipalities are to encourage "the continuity, development and viability of agricultural operations" within their jurisdiction.

Act 100

As a check and balance against the state's right to condemn farmland for highway purposes and disposal of liquid and solid waste, Act 100 amends the

Administrative Code of 1929 to establish an Agricultural Lands Condemnation Approval Board. This act has already protected farmland which might otherwise have gone out of production. The board must determine that there is no reasonable alternative to a particular state project before giving it approval.

House Bill 2032

Another proposed Act, House Bill 2032, seeks to establish an updated record by county of agricultural land transfers. It would require county assessors to periodically submit forms provided by the Department of Agriculture to show how much agricultural land is being lost to development.

Act 39

The act prevents aliens and foreign governments from purchasing more than 100 acres of agricultural land except if acquired through gifts or inheritance.

Soil Erosion and Sedimentation Control Law

Addressing the issue of erosion is the Soil Erosion and Sedimentation Control Law of the Clean Streams Act, which requires those undertaking earth-moving activities of 25 acres or more to implement a plan for controlling erosion. Those found in violation are subject to the fines and penalties in the Clean Streams Law. Enforcement is based on responses to complaints. How effective the law has been is unclear. The state expects to publish an evaluation of this program in 1984 with primary focus to be placed on construction site evaluations. The agricultural evaluation will assess the degree to which farmers are implementing the conservation plans and erosion control plans designed by the Soil Conservation Service.[24]

FOOD INDUSTRY

House Bill 1472

One piece of legislation which could positively influence attracting the food industry to Pennsylvania is the proposed House Bill 1472. This act follows the model law recommended by the Food and Drug Administration which has been already adopted by over 40 states.

APPENDIX:

PENNSYLVANIA FOOD SYSTEM ORGANIZATIONS

There are many organizations which directly or indirectly are working towards developing a sustainable food system in Pennsylvania. Among those listed under "Consumers" are organizations which provide information about starting home gardens, food co-ops, farmers' markets, land trusts, community gardens, and food assistance programs, and which foster consumer awareness about land use and environmental issues relating to the food system, especially farmland preservation. Listed under "Farmers" are those groups which promote a specific kind of farming and which offer planning services for evaluating the different options farmers have for the future use of their land. Those mentioned under "Food Industry" serve as a guide to certain major organizations dealing with different aspects of the state's food industry -- producing, processing, marketing, and distribution. Readers are encouraged to learn about the services of the different groups and where appropriate, to join with them. Changing our food system will occur much faster as more people participate.

CONSUMERS

1. Brandywine Conservancy, Inc.
H. William Sellers
P.O. Box 141
Chadds Ford, PA 19317
(215) 388-7601

2. Community Action Services
Steve Weinberg
920 Olive Street
Scranton, PA 18510

3. Cornucopia Project
Medard Gabel
Rodale Press
33 East Minor Street
Emmaus, PA 18049
(215) 967-5171

4. Dairy and Nutrition Council-Mid East
Shadyside Centre
Suite 5100, Centre Avenue
Pittsburgh, PA 15232
(412) 682-3373

5. Nutritional Development Services
Hazel Preston
Archdiocese of Philadelphia
222 North 17th Street (13th Floor)
Philadelphia, PA 19103
(215) 587-3767

6. Pennsylvania Citizens' Advisory Council
8th Floor
Executive House
P.O. Box 2357
Harrisburg, PA 17120
(717) 787-4527

7. Pennsylvania Coalition on Food
and Nutrition
112 Market Street
Room 810
Harrisburg, PA 17101
(717) 233-6705

8. Pennsylvania Environmental Council
Eleanor W. Winsor
225 South 15th Street
Philadelphia, PA 19102
(215) 735-0966

9. Pennsylvania Food Co-op
Development Program
222 North 17th Street
Philadelphia, PA 19103
(215) 587-3767

10. Urban Gardening Program
Libby Goldstein
Pennsylvania State University
Southeast Corner Broad and Grange
Philadelphia, PA 19147
(215) 224-1821

11. Western Pennsylvania Conservancy
316 Fourth Avenue
Pittsburgh, PA 15222
(412) 288-2777

FARMERS

1. Brandywine Valley Association, Inc.
Robert Struble, Jr.
1760 Unionville - Wawaset Road
West Chester, PA 19380
(215) 793-1090

2. Dairy Council, Inc.
P.O. Box 129
Southampton, PA 18966
(215) 322-0450

3. Dairy and Nutrition Council - Mid East
Shadyside Centre
Suite 5100, Centre Avenue
Pittsburgh, PA 15232
(412) 682-3373

4. Eastern Milk Producers
Cooperative Association, Inc.
6567 Kinne Road
Syracuse, NY 13214
(315) 446-0730

5. Inter-State Milk Producers' Cooperative
1225 Industrial Highway
Southampton, PA 18966
(215) 322-0200

6. Keystone Milk Marketing Council, Inc.
Room 308
2301 North Cameron Street
Harrisburg, PA 17110
(717) 787-4210

7. Milk Marketing, Inc.
Pittsburgh Division
112 First Financial Plaza
150 West Beau Street
Washington, PA 15301
(412) 228-5350

8. Mushroom Growers Co-Operative Association
of Pennsylvania
P.O. Box 375
Kennett Square, PA 19348
(215) 444-3910

9. Natural Lands Trust, Inc. and
Philadelphia Conservationists, Inc.
Andrew Johnson
1339 Chestnut Street
Philadelphia, PA 19107
(215) 567-5590

10. Pennsylvania's Agricultural-Women
Maple Lawn Farms
New Park, PA 17352
(717) 382-4878

11. Pennsylvania Agricultural Safety
Council
204 Agricultural Engineering Bldg.
University Park, PA 16802
(814) 865-7685

12. Pennsylvania Association of Farmers
Cooperatives
c/o William Shaefer
RD 3
Tunkhannock, PA 18657
(717) 836-3575

13. Pennsylvania Association of Future
Farmers of America, Inc.
c/o James Fink
Pennsylvania Department of Education
P.O. Box 911
333 Market Street
Harrisburg, PA 17108
(717) 783-6954

14. Pennsylvania Association of Milk
Dealers
100 Walnut Street
Harrisburg, PA 17101
(717) 238-1738

15. Pennsylvania Beef Council
862 Webster Drive
State College, PA 16801
(814) 238-5888

16. Pennsylvania Cooperative
Sheep and Wool Growers Association
RD 4, Box 524
Manheim, PA 17545

FARMERS (Continued)

17. Pennsylvania Cooperative Swine Breeders Association
c/o Ronald Trostle
RD 2, Box 246
Red Lion, PA 17356
(717) 757-6062

18. Pennsylvania Dairy and Allied Industries Association
Farm Show Complex
P.O. Box 3362
Harrisburg, PA 17105
(717) 787-2905

19. Pennsylvania Dairy Goat Association
RD 4, Box 315
Tarentum, PA 15084

20. Pennsylvania Dairy Sanitarians Association
RD 1, Box 393
Conestoga, PA 17516
(717) 872-4592

21. Pennsylvania Dairymen's Association
P.O. Box 458
Camp Hill, PA 17011
(717) 938-5404

22. Pennsylvania Egg Marketing Association
4210-A Sussex Drive
Harrisburg, PA 17109
(717) 545-3684

23. Pennsylvania Farm and Power Equipment Association
4605 Locust Lane
Box 4401
Harrisburg, PA 17101
(717) 545-3120

24. Pennsylvania Farmers Association
P.O. Box 763
510 South 31st Street
Camp Hill, PA 17011
(717) 761-2740

25. Pennsylvania Farmers Open Air Market Association
Oak Grove Farms
Pitman, PA 17964
(717) 648-4086

26. Pennsylvania Farmers Union
Suite 608, Locust Court
212 Locust Street
Harrisburg, PA 17101
(717) 232-9648

27. Pennsylvania Forage and Grassland Council
c/o Richard Hann
Milton Hershey School Farms
Hershey, PA 17033
(717) 534-3507

28. Pennsylvania Foundation Seed Cooperative
P.O. Box 203
Jersey Shore, PA 17740
(717) 398-2800

29. Pennsylvania Livestock and Allied Industries Association, Inc.
Farm Show Complex
P.O. Box 3362
Harrisburg, PA 17105
(717) 787-2905

30. Pennsylvania Maple Syrup Producers' Council
c/o Robert Hess
RD 1
Montrose, PA 18801
(717) 278-3285

31. Pennsylvania Nut Growers Association
c/o Albert Magee
Route 3, Box 78
Duncannon, PA 17020
(717) 834-4611

32. Pennsylvania Pork Producers Council
RD 2, Box 219
Kutztown, PA 19530
(215) 285-6519

33. Pennsylvania Poultry Federation
500 North Progress Avenue
Harrisburg, PA 17109
(717) 652-7530

34. Pennsylvania Raw Milk Producers-
 Distributors Association, Inc.
 RD 10, Box 300
 York, PA 17404
 (717) 792-3216

35. Pennsylvania Red Cherry Growers Association
 c/o Adams County Extension Service
 999 Lincoln Way West
 Gettysburg, PA 17325
 (717) 334-6271

36. Pennsylvania State Beekeepers Association
 c/o Mrs. Glenn Crimbring
 RD 1, Box 209
 Canton, PA 17724
 (717) 673-8201

37. Pennsylvania State Council of Farm
 Organizations
 1604 North Second Street
 Harrisburg, PA 17102
 (717) 234-5001

38. Pennsylvania State Grange
 1604 North Second Street
 Harrisburg, PA 17102
 (717) 234-5001

39. Pennsylvania Vegetable Growers Association
 Waverly Road
 Dalton, PA 18414
 (717) 563-2690

40. Pennsylvania Young Farmers Foundation
 c/o Carl Herr
 Pennsylvania Advisor Council of Vocational
 Education
 Suite 410, City Towers
 301 Chestnut Street
 Harrisburg, PA 17101
 (717) 232-7653

41. Society of Farm Women of Pennsylvania
 c/o Mrs. Alton Stapleton
 RD 1
 Saxton, PA 16678
 (814) 635-3872

FOOD INDUSTRY

1. Inter-State Milk Producers Cooperative
1225 Industrial Highway
Southampton, PA 18966
(215) 322-0200

2. Keystone Milk Marketing Council, Inc.
Room 308
2301 North Cameron Street
Harrisburg, PA 17110
(717) 787-4210

3. Milk Marketing, Inc.
Pittsburgh Division
112 First Financial Plaza
150 West Beau Street
Washington, PA 15301
(412) 228-5350

4. Pennsylvania Association of Meat Processors
RD 3, Box 904
Mount Joy, PA 17752

5. Pennsylvania Association of Milk Dealers
100 Walnut Street
Harrisburg, PA 17101
(717) 238-1738

6. Pennsylvania Egg Marketing Association
4210-A Sussex Drive
Harrisburg, PA 17109
(717) 545-3684

7. Pennsylvania Food Merchants Association
Main Office: P.O. Box 10009
2426-30 Parade Street
Erie, PA 16514
(814) 454-3844
Legislative Office: 224 Pine Street
Harrisburg, PA 17101
(717) 234-6031

8. Pennsylvania Food Processors Association
Keystone Building
Room 401
22 South Third Street
Harrisburg, PA 17101
(717) 238-1252

9. Pennsylvania Grocers Association
Beury Building
3701 North Broad Street
Philadelphia, PA 19140
(215) 228-0808

10. Pennsylvania Livestock, Dairy and Allied Industries Association
Farm Show Complex
P.O. Box 3362
Harrisburg, PA 17105
(717) 787-2905

11. Pennsylvania Meat Packers Association
327 East Park Avenue
State College, PA 16801
(814) 237-7022

12. Pennsylvania Poultry Processors Association
4210-A Sussex Drive
Harrisburg, PA 17109
(717) 545-3684

13. Pennsylvania Raw Milk Producers-Distributors Association, Inc.
RD 10, Box 300
York, PA 17404

NOTES - Where Do We Stand?

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2. Pennsylvania Department of Agriculture, Pennsylvania . . . We're Growing Better!

3. Pennsylvania Department of Agriculture, Pennsylvania Crop and Livestock Annual Summary 1980 (Harrisburg: Pennsylvania Department of Agriculture, 1981), p. 72; Pennsylvania . . . We're Growing Better!

4. Rodale Press, Comp., Pennsylvania Food Imports chart (Emmaus: Rodale Press, 1982).

5. Pennsylvania Food Imports chart.

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8. Pennsylvania imports 3,520,665,660 pounds of meats, poultry, and fresh fruits and vegetables per year. A fully loaded truck carries 40,000 pounds.

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12. William Serrin, "New York Area's Reliance on Imported Foods Grows," New York Times, 26 July, 1981.

13. Telephone interview with John McNelis, Pennsylvania Grocer's Association.

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15. Transportation accounts for 5.3 percent of consumer expenditures for farm food. U.S. Department of Agriculture, 1980 Handbook of Agricultural Charts, Agricultural Handbook No. 574 (Washington, D.C.: GPO, 1980), p. 39.

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PENNSYLVANIA FOOD IMPORTS

Pennsylvania agriculture has a lot going for it. Pennsylvania ranks first in the nation for mushroom production, fourth for peaches and fifth for apples. Pennsylvania has over 4 million acres of prime farmland on which a wide variety of foods can be raised. Despite this bounty, 71 percent of Pennsylvania's food must be imported, much of it from the other end of the country. Pennsylvanians spend over $8 billion annually for food produced outside the state.

However, Pennsylvania has a great potential for expanding its food production. Most of the fruits and vegetables and much more of the meat Pennsylvanians consume could be produced in state. In addition to producing more food, other steps need to be taken, including encouraging local markets, maintaining the farm resource base, and expanding consumer awareness.

footnotes

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a. Production figures are taken from the Pennsylvania Crop and Livestock Annual Summary 1980 and converted to retail weight by U.S. Department of Agriculture (USDA) conversion factors. For the fresh vegetables not surveyed by the PA Crop Reporting Service, Dr. Peter Ferretti, Department of Horticulture, Pennsylvania State University, provided the only estimates available.

b Prices were obtained from: Livestock and Meat Statistics #522, USDA; A & P, Allentown; Real Foods, Allentown; Ron Holding Corporation and Tom Goldschmidt, G & G Produce, Farmer's Market, Allentown Fair Grounds; Bureau of Labor Statistics. January, 1982 prices were converted to 1980 prices by obtaining the purchasing power of the 1980 U.S. dollar, Bureau of Labor Statistics. Prices may be higher due to out-of-season commodities.

c. Farmer-to-Consumer Direct Marketing in Six States, USDA, Economics and Statistics Cooperative Service (ESCS), July 1980.

d. Pennsylvania consumption is based on U.S. per capita consumption figures appearing in Food Consumption Prices and Expenditures, USDA Statistical Bulletin No. 672, 1981.

e Acreage requirements based on 90-95 percent marginal land unsuitable for crops, Dr. Lowell Wilson, Dairy and Animal Science, Pennsylvania State University.

f Veal is a by-product of the dairy industry, so land area would be included in dairy products.

g Land requirements, Mr. Lou Moore, Agricultural Economics, Pennsylvania State University.

h Land requirements, Mr. Herbert Jordan, Poultry Science, Pennsylvania State University.

i 354,250,000 dozen.

j Aquaculture: Catfish and Trout, Inventory and Sales, USDA Crop Reporting Board, ESCS, April 1981.

k Extrapolated from yields of 100 lbs. in 1/385th acre in an intensive recirculated fish culture unit, Steve Van Gorder, Rodale Research Center.

l Dairy product land requirements, Dr. Richard Adams, Dairy and Animal Science, Pennsylvania State University.

m 79,939,000 gallons.

n Data not collected by USDA, PA Department of Agriculture, or other sources.

o Not applicable.

p Production figures are generous, assuming no loss or waste between producer and consumer.

q Yield per acre determined from Knott's Handbook for Vegetable Growers, Oscar A. Lorenz and Donald N. Mayard, 1980, John Wiley and Sons, Inc.

r 1980 per capita consumption taken from American Mushroom Institute, Kennett Square, Pennsylvania.

s. 1980 per capita consumption taken from Vegetable Outlook and Situation Report, July 1981, Economic Research Service, USDA.

t Includes zucchini, field and chick peas, kidney and baked beans. Price used for retail value are an average of these vegetables.

u Pennsylvania 1978 Orchard and Vineyard Survey, PA Crop Reporting Service.

v Land requirements taken from Vegetables 1980 Annual Summary: Acreage, Yield, Production, Value, USDA Crop Reporting Board, Economic and Statistics Service, released June 5, 1981. Data is preliminary and subject to revision.

w Personal communication. Ray Reiter, Marketing Service Division, PA Department of Agriculture.

x Pennsylvania has no processing plants, so all soybeans would be exported. Dr. Elwood Hatley, Department of Agronomy, Pennsylvania State University.

y Flour.

z Lard is a by-product of hog slaughter.

* Using sugar beets as raw material, with yields of 20 tons/acre.

Cider, jelly, jams, etc.

+ Tomatoes, sweet corn, and snap beans are grown for processing as well as for fresh market, so any amount not considered in the fresh category would be utilized in processing.

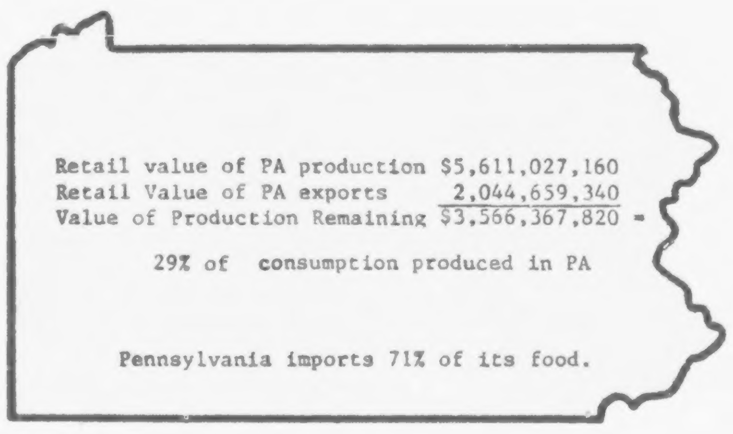
± Some grain and vegetable yields per acre were determined from Agricultural Statistics, 1980, USDA.

Prepared by: The Cornucopia Project, RODALE PRESS, INC. E. Minor St., Emmaus, PA 18049

Pennsylvania Food Imports

AS DETERMINED BY FOOD PRODUCTION AND CONSUMPTION BY WEIGHT AND RETAIL VALUE

COMMODITY	PRODUCTION (Total Fresh & Processed)			CONSUMPTION						
	Retail Weight (1,000 lbs)[a]	Retail Value ($1,000)[b] 1980 Dollars	Direct Market $ Value of Sales[c] (1,000)	Consumption in PA[d] (1,000 lbs.)	Retail Value ($1,000 - 1980)	% Imported	Amount Imported ($1,000)	Amount Exported (% of Production)	Retail Value of Amount Exported ($1,000)	Amount of Land Required to Produce 100% of PA Consumption (Acres)[f]
Meats										
Beef	207,194.37	483,384.47		907,825.5	2,115,233.42	77.2	1,632,960.2			7,269,866.6[e]
Veal	18,864.9	57,915.24		17,800.5	54,647.54			5.6	3,243.25	†
Lamb and Mutton	2,725.24	6,815.09		15,427.1	38,567.75	82.3	31,741.26			5,696.0
Pork	138,645.0	180,238.5		810,516.1	1,053,670.93	82.9	873,593.20			1,180,544.0[g]
Poultry										
Chicken	321,272.64	131,353.76		593,350.0	316,469.16	45.9	143,259.34			343,898.3[h]
Turkey	74,936.0	53,516.3		124,603.5	88,986.14	39.9	35,303.75			107,091.2[h]
Eggs	554,991.67[i]	371,267.23		410,598.2	274,673.77			26.0	96,529.48	268,324.1
Livestock, Poultry, and Products			8,775.17							
Fish	750.6[l]	2,191.69		150,710.9	440,063.77	99.6	438,303.52			6,524.3[k]
Dairy Products			27,042.62							
Butter	59,172.0	105,378.23		52,214.8	92,988.3			11.8	12,434.63	188,860.9
Cheese: Hard	101,262.0	273,707.14		208,859.2	564,538.06	51.5	290,737.1			345,834.4
Cottage and Creamed	101,062.0	118,768.06		53,401.5	62,757.44			47.2	56,058.53	440,685.4
Evaporated and Condensed Milk	100,844.0	90,251.35		84,255.7	75,405.48			16.4	14,801.22	29,981.0
Fluid Milk and Cream	8,496,000.0	1,920,096.0		2,966,750.0	670,485.5			65.0	1,249,610.5	3,724,754.6
Frozen Dairy Products	319,756.0[m]	287,614.13		312,102.1	280,729.6			2.4	6,903.74	281,204.0
Dry Milk Products	48,301.0	99,990.8		80,695.6	167,052.8	40.2	67,155.23			102,496.9
Vegetables, Fresh										
Artichokes	NC[n]			3,560.1	4,795.31					NA[o]
Asparagus	819.0[p]	1,399.31	41.94	3,560.1	6,082.64	77.0	4,683.64			1,186.7
Broccoli	3,128.0[q]	3,082.21		20,173.9	19,878.56	84.5	16,797.38			2,373.4
Cabbage, Summer & Fall	35,619.0	9,337.88	194.47	99,682.8	26,132.84	64.3	16,803.42			8,038.9
Carrots	8,875.5	3,129.15		72,388.7	25,521.36	87.8	22,407.75			2,373.4
Cauliflower	4,186.0	6,016.79		15,427.1	22,174.3	72.9	16,165.06			1,101.9
Celery	11,160.0	9,987.75		86,629.1	77,529.58	87.1	67,528.26			1,443.8
Cucumbers	7,084.0	5,699.50	163.77	47,468.0	38,190.85	85.1	32,500.42			2,157.6
Eggplant	2,610.0	1,392.07		5,933.5	3,164.69	56.0	1,772.28			509.2
Escarole	NC			7,120.2	5,728.63					819.7
Garlic	NC			9,493.6	30,037.75					[illegible]
Green Peppers	7,084.0	6,339.9	127.11	39,161.1	35,047.62	82.0	28,739.95			3,560.1
Lettuce	2,297.1	2,055.81		295,488.3	264,450.21	99.3	262,599.06			11,963.30
Minor Vegetables	NC			121,043.4	103,952.07					NC
Mushrooms	213,709.0	191,261.01		140,003.06	12,463.20			93.5	178,829.04	NA
Onions	10,264.8	3,618.96		121,043.4	42,675.06	91.5	39,047.68			3,879.6
Peas	5,320.0	4,280.26		39,161.1	31,507.45	86.4	27,222.44			9,790.3
Potatoes	401,280.0	210,399.13	731.57	585,043.1	306,749.8	31.4	96,319.44			30,791.7
Snap Beans, Summer	9,306.0	13,291.95	170.14	15,427.1	22,034.84			+		5,142.4
Spinach	3,923.04	4,894.07		8,306.9	10,363.02	52.8	5,471.68			559.0
Squash	120,000.0	64,003.2	116.13	NC						NC
Sweet Corn	71,116.0	17,615.15	2,267.24	78,322.2	19,400.1			+		16,317.1
Sweet Potatoes	insignificant			40,347.8	21,519.90	99.9	21,498.38			3,502.9
Tomatoes	38,760.0	72,650.84	679.61	135,283.8	96,614.28			+		11,273.7
Vegetables, Processed										
Asparagus, frozen	NC			712.02	2,304.32					455.7
canned	NC			3,560.1	6,629.76					1,447.8
Beets, canned	NC			14,240.4	4,248.2					641.4
Broccoli, frozen	NC			16,613.8	16,370.57					2,599.6
Brussel Sprouts, frozen	NC			2,966.75	2,145.55					281.8
Carrots, frozen	NC			11,036.0	7,781.70					658.5
canned	NC			5,933.5	2,306.47					259.3
Cauliflower, frozen	NC			5,458.82	5,477.6					557.6
Corn, frozen	NC			22,903.31	17,598.9					11,969.2
canned	NC			69,828.6	30,488.32					24,673.3
Lima Beans, frozen	NC			5,577.49	5,798.36					2,252.5
canned	NC			3,560.1	1,770.08					855.8
Onions, Dehydrated	NC			30,854.2	187,435.56					NA
frozen	NC			8,069.56	6,200.65					310.5
Peas, frozen	NC			18,275.18	13,712.23					5,926.8
canned	NC			39,161.1	13,452.62					8,610.6
Pickles, canned	NC			81,882.3	50,334.69					2,769.1
Potatoes, frozen	NC			269,380.9	182,640.25					35,444.9
canned	NC			15,427.1	4,602.21					1,276.5
Pumpkin and Squash, canned	NC			4,746.8	1,931.0					321.6
Sauerkraut	NC			14,240.4	4,505.66					543.4
Snap Beans, frozen	NC			11,867.0	9,011.33					4,517.1
canned	NC			73,575.4	29,930.47					16,898.6
Southern Greens, frozen	NC			10,680.2	8,110.19					710.2
Spinach, frozen	NC			8,900.25	5,873.45					856.5
canned	NC			5,933.5	2,681.94					359.8
Sweet Potatoes	NC			11,867.0	8,474.94					1,333.2
Tomatoes, Whole-canned	NC			72,388.7	32,065.3					4,731.5
Tomatoes Pulp and Puree-canned	NC			9,493.6	4,033.64					1,297.4
Catsup, Paste, Sauce, etc, canned	NC			143,590.7	79,181.66					14,848.6
Tomato and Vegetable Juices canned	NC			37,974.4	16,306.21					2,443.5
Other, canned	NC			10,680.3	5,117.15[t]					NA
Fruits, Fresh										
Apples	347,200.0	390,788.35	5,875.23	189,872.0	135,598.99			65.3	255,184.79	10,945.5[u]
Bananas	-0-	-0-		246,833.6	98,180.53	100.0	98,180.53			NA
Cherries, tart	5,152.0	8,802.50		NC						2,543.6
sweet	1,288.0	2,206.63	316.84	7,120.2	12,165.29	82.0	9,975.54			2,775.4
Citrus: Grapefruit	-0-	-0-		92,562.6	27,613.27	100.0	27,613.27			NA
Lemons/Limes	-0-	-0-		27,294.1	19,492.35	100.0	19,492.35			NA
Oranges/Tangerines Tangelos	-0-	-0-		210,045.59	56,964.45	100.0	56,964.45			NA
Grapes	101,920.0	82,000.76	132.47	42,721.2	34,371.77			58.0	47,628.99	5,443.6
Melons	NC		407.81	200,552.3	65,267.74	99.8	65,137.21			12,565.3[v]
Peaches/Nectarines	98,763.0	115,099.99	2,376.90	83,069.0	96,871.75			15.8	18,185.8	7,738.9
Pears	6,650.0	2,344.52	305.47	28,480.8	10,041.19	76.7	7,701.59			6,103.0
Plums and Prunes	NC		89.33	17,800.5	20,758.23	99.5	20,654.44			2,433.8
Strawberries	5,704.0	13,303.55	2,312.72	20,173.9	47,051.99	71.8	33,783.33			4,880.8[w]
Fruits, Processed			117.03[s]							
Frozen Fruits	NC			32,871.59	34,173.30					
Frozen Citrus Juices	NC			117,483.3	156,121.21					
Canned and Chilled Fruits	NC			206,485.8	126,930.95					
Canned and Chilled Fruit Juices	NC			274,483.71	117,863.31					
Dried Fruits	NC			34,888.98	86,418.61					
Grains and Legumes										
Barley	insignificant			14,240.4	8,882.59	100.0	8,882.59			8,376.2
Corn Flour and Meal	243,037.97	87,882.53		89,002.5	32,183.30			63.4	55,717.53	37,499.7
Corn Cereal	NC			75,948.8	67,477.66					
Corn Starch	NC			22,547.3	13,248.79					
Oats	insignificant			36,787.7	26,272.30	100.0	26,272.30			35,506.7
Rice	-0-	-0-		110,363.1	45,893.39	100.0	45,893.39			NA
Rye	insignificant			8,306.9	2,027.55	100.0	2,027.55			6,860.9
Soybeans (oil)	27,758.95	42,409.02		NC				100.0[x]	42,409.02	NA
Wheat	108,586.96	27,485.53		1,382,505.5	349,939.79	92.1	322,294.55			859,395.3
Wheat Cereal	NC			33,227.6	32,440.77					
Dry Edible Beans	NC			77,135.5	60,665.53					64,279.6
Dry Field Peas	NC			4,746.8	2,102.64					3,166.6
Fats and Oils										
Lard	41,081.90	25,625.25		29,667.5	18,505.4			27.8	7,123.82	
Margerine	NC			132,910.4	94,919.29					
Shortening	NC			217,166.1	125,643.62					
Other Edible Fats and Oils	NC			269,380.9	228,909.11					
Sweeteners										
Cane and Beet Sugar	-0-	-0-		992,081.2	627,788.98	100.0	627,788.98			202,384.6*
Honey	3,280.0	3,825.0		14,240.4	16,606.58	77.0	12,787.07			
Maple Syrup (gal.)	56,000.	1,288.38		1,186.7	2,478.14	47.9	1,187.03			
Syrups (Corn)	NC			575,549.5	364,207.72					
Honey & Syrups			238.95							
Other										
Coffee	-0-	-0-		92,562.6	365,666.7	100.0	365,666.7			NA
Tea	-0-	-0-		9,493.6	25,660.82	100.0	25,660.82			NA
Cocoa	-0-	-0-		30,854.2	54,947.63	100.0	54,947.63			NA
Tree Nuts	NC			20,173.9	32,644.6					NC
Peanuts	-0-	-0-		72,388.7	101,431.05	100.0	101,431.05			NA
TOTALS	12,692,678.64	5,611,027.16	52,482.52	15,838,765.92	12,137,234.29		6,109,053.91		2,044,659.34	15,835,525.0



Retail value of PA production $5,611,027,160
Retail Value of PA exports 2,044,659,340
Value of Production Remaining $3,566,367,820 =

29% of consumption produced in PA

Pennsylvania imports 71% of its food.

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